REFERENCES

Alejano LR, Alonso E (2005) Considerations of the dilatancy angle in rocks and rock masses. International Journal of Rock Mechanics and Mining Sciences 42(4): 481–507

Alejano LR, Ramírez-Oyanguren P, Taboada J (1999) FDM predictive methodology for subsidence due to flat and inclined coal seam mining. International Journal of Rock Mechanics and Mining Sciences 36 (4): 475-491. https://doi.org/10.1016/S0148-9062(99)00022-4

Arzua J, Alejano LR (2013) Dilation in granite during servo-controlled triaxial strength tests. International Journal of Rock Mechanics and Mining Sciences 61:43–56

Babcock CO (1985) Constraint is the prime variable in pillar strength. In: Peng SS (ed) Proceedings of the 4th International Conference on Ground Control in Mining, Morgantown. West Virginia University, pp 105-116

Badr SA (2004) Numerical analysis of coal yield pillars at deep longwall mines. PhD thesis, Colorado School of Mines, Golden, CO, USA

Bai Q, Tu S, Wang F, Zhang C (2017) Field and numerical investigations of gate road system failure induced by hard roofs in a longwall top coal caving face. International Journal of Coal Geology 173: 176-199

Bai QS, Tu SH, Zhang XG, Zhang C, Yuan Y (2014) Numerical modelling on brittle failure of coal wall in longwall face- a case study. Arabian Journal of Geosciences 7: 5067-5080

Barron LR, DeMarco MJ, Kneisley RO (1994) Longwall gate road stability in four deep western U.S. coal mines IC 9406. Bureau of Mines, United States Department of Interior

Behera B, Yadav A, Singh GSP, Sharma SK (2020a) A numerical modeling approach for evaluation of spalling associated face instability in longwall workings under massive sandstone roof. Engineering Failure Analysis 117: 1-29

Behera B, Yadav A, Singh GSP, Sharma SK (2020b) Numerical modeling study of the geomechanical response of strata in longwall operations with particular reference to Indian geo-mining conditions. Rock Mechanics and Rock Engineering 53: 1827-1856

Bertuzzi R, Douglas K, Mostyn G (2016) An Approach to model the strength of coal pillars. International Journal of Rock Mechanics Mining Sciences 89: 165-175

Bieniawski ZT (1976) Rock mass classifications in rock engineering. In: Bieniawski ZT (ed) Exploration for rock engineering, vol. 1. Rotterdam, Balkema, pp 97–106.

Bieniawski ZT (1968) The effect of specimen size on compressive strength of coal. International Journal of Rock Mechanics and Mining Sciences 5: 325-335

Bieniawski ZT (1992) A method revisited: coal pillar strength formula based on field investigations. In: Proceedings of workshop on coal pillar mechanics and design, Bu Mines IC 9315, pp 158-165

Bieniawski ZT, Bernede MJ (1979) Suggested methods for determining the uniaxial compressive strength and deformability of rock materials: Part 1. Suggested method for determining deformability of rock materials in uniaxial compression. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts 16 (2): 138-140

Bhaskara B (2022) Optimisation of face length for longwall workings in Indian geo-mining conditions. PhD Thesis, Indian Institute of Technology (Banaras Hindu University), Varanasi.

Brown ET, Bray JW, Santarelli FJ (1989) Influences of stress-dependent elastic moduli on stresses and strains around axisymmetric boreholes. Rock Mechanics and Rock Engineering 22(3): 189–203

Cai M, Kaiser PK, Tasaka Y, Minami M (2007) Determination of residual strength parameters of jointed rock masses using the GSI system. International Journal of Rock Mechanics and Mining Sciences 44 (2): 247-265

Cai MF, He MC, Liu DY (2013) Rock mechanics and engineering, 2nd edn. Science Press, Beijing

Carr F, Wilson AH (1982) A new approach to the design of multi-entry developments for retreat longwall mining. In: Proceedings of the 2nd Conference on Ground Control in Mining, Morgantown, WV, July 19-21, pp 1-21

Chekan G, Listak J (1993) Design practices for multiple-seam longwall mines. Information Circular 9360, U. S. Bureau of Mines, Pittsburgh, PA

Choi DS, McCain DL (1980) Design of longwall systems. Trans Soc Min Eng AIME 258:1761–1764

Chokhani (2012) Numerical Modelling Study for Assessment of Chain Pillar Stability in Longwall Panels. MTech Thesis, Department of Mining Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi

CMR (2017). Coal mines regulations 2017. Retrieved 22 June 2017 from: https://www.dgms.net/Coal%20Mines%20Regulation%202017.pdf

Cook NGW (1970) An experiment proving that dilatancy is a pervasive volumetric property of brittle rock loaded to failure. Rock Mechanics and Rock Engineering 2(4): 181–188

Colwell MG (1998) Chain pillar design - calibration of ALPS. Australian Coal Association Research Program, final report—ACARP project C6036

Colwell M, Hill D, Frith R (2003) ALTS II—A longwall gate road design methodology for Australian collieries. In: Proceedings of the 1st Australasian Ground control in mining conference: ground control in mining: technology and practice: Sydney, pp 123–135

Cuss RJ, Rutter EH, Holloway RF (2003) The application of critical state soil mechanics to the mechanical behaviour of porous sandstone. International Journal of Rock Mechanics and Mining Sciences 40: 847–862

Das MN (1986) Influence of width/height ratio on post-failure behaviour of coal. International Journal of Mining and Geological Engineering 4, 79–87 https://doi.org/10.1007/BF01553759

Das SK (2000) Observations and classification of roof strata behavior over longwall coal mining panels in India. International Journal of Rock Mechanics and Mining Sciences 37: 585–597

Das MN, Sheorey PR (1986) Triaxial strength behaviour of some Indian coals. Journal of Mine, Metals & Fuels 34: 118-122

Das AJ, Mandal PK, Paul PS et al. (2019) Assessment of the strength of inclined coal pillars through numerical modelling based on the ubiquitous joint model. Rock Mechanics and Rock Engineering 52: 3691-3717

Detournay E (1986) Elastoplastic model of a deep tunnel for a rock with variable dilatancy. Rock Mechanics and Rock Engineering 19(2): 99–108

Diederichs MS (2000) Instability of Hard Rockmasses: The role of Tensile Damage and Relaxation, University of Waterloo, Ontario, Canada

Diederichs MS (2007) The 2003 Canadian geotechnical colloquium: mechanistic interpretation and practical application of damage and spalling prediction criteria for deep tunnelling. Canadian Geotechnical Journal 44 (9), 1082–1116

Dolinar DR, Esterhuizen GS (2007) Evaluation of the effect of length on the strength of slender pillars in limestone mines using numerical modeling. In: Proceedings of the 26th international conference on ground control mining. Morgantown, WV: West Virginia University, pp 304-313

Edelbro C (2009) Numerical modelling of observed fallouts in hard rock masses using an instantaneous cohesion-softening friction-hardening model. Tunnelling and Underground Space Technology 24 (4): 398–409

Esterhuizen GS, Mark C, Murphy MM (2010) Numerical model calibration for simulating coal pillars, gob and overburden response. In: Proceedings of the 29th international conference on ground control in mining, pp 1–12

Feng G, Wang P, Chugh YP (2019) Stability of Gate Roads Next to an Irregular Yield Pillar: A Case Study. Rock Mechanics and Rock Engineering 52: 2741–2760. https://doi.org/10.1007/s00603-018-1533-y

Frith R, Reed G (2019) Limitations and potential design risks when applying empirically derived coal pillar strength equations to real-life mine stability problems. International Journal of Mining Science and Technology 29 (1): 17-25

Galvin JM, Hebblewhite BK, Salamon MDG (1999) UNSW pillar strength determinations for Australian and South African conditions. In: Proceedings of the 37th US Rock Mechanics Symposium. Vail: NIOSH, 63–71

Ghosh AK (2003) Why longwall in India has not succeeded as in other developing countries like China. Inst Eng (I) J-MN 84: 1-4

Ghosh N, Agrawal H, Singh SK, Banerjee G (2020) Optimum chain pillar design at the deepest multi-seam longwall workings in India. Mining, Metallurgy & Exploration 37: 651-664

Goldstein M, Gooser B, Pyrogovisky N (1966) Investigation of mechanical properties of cracked rock. In: Proceedings of the first congress international society on rock mechanics, Lisbon, pp 621–641

Guo Z, Jiang Y, Pang J, Liu J (2013) Distribution of ground stress on Puhe Coal Mine. International Journal of Mining Science and Technology 23(1):139–143

Hajiabdolmajid V, Kaiser PK, Martin CD (2002) Modelling brittle failure of rock. International Journal of Rock Mechanics and Mining Sciences 39 (6): 731–741

Harrison JP, Hudson JA (2000) Engineering rock mechanics (Part II). Oxford: Pergamon Press

Hill D, Stone R, Suchowerska A, Trueman R (2015) Pillar abutment loading—new concepts for coal mining industry. In: Proceedings of the 15th coal operators' Conference, University of Wollongong, The Australasian Institute of Mining and Metallurgy and Mine Managers Association of Australia, pp 204–211

Hoek E, Carranza-Torres CT, Corkum B (2002) Hoek-Brown failure criterion-2002 edition. In: Proceedings of the fifth North American rock mechanics symposium, Toronto, Canada, vol. 1, pp 267–273

Holland CT and Gaddy FL (1957) Some Aspects of Permanent Support of Overburden on Coal Beds. In: Proceedings of West Virginia Coal Mining Institute, pp 43-66.

Hsiung SM and Peng SS (1985) Chain pillar design for US longwall panels. Mining Science and Technology 2 (4): 279-305

https://scclmines.com/scclnew/company_about-us_godavari-valley-map.asp

https://pib.gov.in/PressReleseDetail.aspx?PRID=1810554 . Accessed 9 June 2022

https://www.ibef.org/economy/economic-survey-2021-22. Accessed 9 June 2022

https://www.bcclweb.in/?page_id=6346&lang=en

Iannacchione AT (1990) The effects of roof and floor interface slip on coal pillar behaviour. Im: Proceedings of 31st U.S. Symposium on Rock Mechanics, Colorado School of Mines, Golden, CO, pp 153–160

Islavath SR, Deb D, Kumar H (2016) Numerical analysis of a longwall mining cycle and development of a composite longwall index. International Journal of Rock Mechanics and Mining Sciences 89: 43-54

Itasca (2015) FLAC-3D Version 5.01 User's Manual. Itasca Consulting Group, Inc., Minneapolis, USA

Itasca Consulting Group, Inc. (2020) Griddle, Ver. 2.0. Minneapolis: Itasca

Jaiswal A, Shrivastva BK (2009) Numerical simulation of coal pillar strength. International Journal of Rock Mechanics and Mining Sciences 46(4):779–788

Jeremic ML (1985) Strata mechanics in coal mining. AA Balkema Publishers, Netherlands,

Jiang L, Zhang P, Chen L et al (2017) Numerical Approach for Goaf-Side Entry Layout and Yield Pillar Design in Fractured Ground Conditions. Rock Mechanics and Rock Engineering 50: 3049–3071. https://doi.org/10.1007/s00603-017-1277-0

Karacan CO (2010) Prediction of porosity and permeability of Caved zone in longwall goafs. Transp. Porous Media 82: 413–439.

Karmis M, Triplett T, Haycocks C, Goodman G (1983) Mining subsidence and its prediction in an Appalachian coalfield. Rock Mechanics: Theory, Experiment, Practice. In: Proc. 24th US Symp. Rock Mechanics, 20–23 June 1983, Texas A&M University. Balkema, Rotterdam, pp 665–675.

Katkuri S, Deb D, Reddy BV et al (2019) Neural Network Assisted Analysis for Longwall Gate Road Stability Using Measured Roof Convergence Data. Geotechnical and Geological Engineering 37: 3843–3860. https://doi.org/10.1007/s10706-019-00873-6

King HJ, Whittaker BN (1971) A review of current knowledge on roadway behaviour, especially the problems on which further information is required. In: Proceedings of the Symposium on Strata Control in Roadways. London: Inst. Min. Met., pp 73–87

Kratzsch H (1983) Mining subsidence engineering. Springer, Berlin Heidelberg, New York

Larson MK, Whyatt JK (2012) Load transfer distance calibration of a coal panel scale model: A case study. In: Barczak T et al (ed) Proceedings of the 31st International Conference on Ground Control in Mining (Morgantown, WV: July 31–August 2, 2012) Morgantown, WV, West Virginia University, pp 195–205

Larson MK, Lawson HE, Tesarik DR (2015) Load transfer distance measurements at two mines in the Western US. In: Proceedings of the 34th International Conference on Ground Control in Mining, Morgantown, West Virginia, pp 54-64

Lawson HE, Tesarik D, Larson M (2017) Abraham H. Effects of overburden characteristics on dynamic failure in underground coal mining. International Journal of Mining Science and Technology 27(1): 121–129

Le TD, Oh J, Hebblewhite B, Zhang C, Mitra R (2018) A discontinuum modelling approach for investigation of Longwall Top Coal Caving mechanisms. International Journal of Rock Mechanics and Mining Sciences 106: 84-95

Listak JM, Zelenko JC, Barton TM (1988) Effects of various longwall chain pillar configurations on gate road stability. Reports of Investigations (United States, Bureau of Mines) 9184.

Li W, Bai J, Peng S et al. (2015) Numerical Modeling for Yield Pillar Design: A Case Study. Rock Mechanics and Rock Engineering 48: 305–318. https://doi.org/10.1007/s00603-013-0539-8

Lu J, Ray A, Morsy K, Peng S (2008) Effects of rock/coal interface property on coal pillar strength. In: Proceedings of the 27th International Conference on Ground Control in Mining, West Virginia University, Morgantown, WV, pp 262-267

Madden BJ (1988) The performance of coal pillars designed to them squat pillar formula. In: Proceedings of 29th US Symposium on Rock Mechanics, Balkema, Rotterdam, pp 699–708

Mark C (1987) Analysis of longwall pillar stability. Ph.D. Disseratation, The Pennsylvania State University

Mark C (1990) Pillar Design Methods for Longwall Mining. United States Bureau of Mines Information Circular 9247

Mark C (1992) Analysis of Longwall Pillar Stability (ALPS): an update. In: Proceedings of the workshop on coal pillar mechanics and design, U.S. Bureau of Mines, pp 238–249

Mark C, Chase FE (1997) Analysis of Retreat Mining Pillar Stability (ARMPS). In: Proceedings of the new technology for ground control in retreat mining. US Department of Health and Human Services, Centers for Disease Control and Prevention, NIOSH, 9446, pp 17–37

Mark C, Chase FE, Molinda GM (1994) Design of Longwall Gate Entry Systems Using Roof Classification. In: Proceedings of the United States Bureau of Mines Technology Transfer Seminar - New Technology for Longwall Ground Control. USBM Special Publication 01-94, pp 5 – 17

Mark C, Heasley K, Su D (1998) Recent Developments in Coal Pillar Design in the U.S. In: The Proceedings of International Conference on Geomechanics/Ground Control in Mining and Underground Construction, Wollongong, NSW, pp 309 – 324

Majdi A, Hassani FP, Nasiri MY (2012) Prediction of the height of destressed zone above the mined panel roof in longwall coal mining. International Journal of Coal Geology 98: 62-72

Medhurst TP (1996) Estimation of the in situ strength and deformability of coal for engineering design. Ph.D. thesis, University of Queensland

Medhurst TP, Brown ET (1998) A study of mechanical behaviour of coal for pillar design. International Journal of Rock Mechanics and Mining Sciences 35(8):1087–105

Majumder S, Chakrabarty S (1991) The vertical stress distribution in a coal side of a roadway-an elastic foundation approach. Mining Science and Technology 12(3): 233–240

Marinos P, Hoek E (2000) GSI: A geologically friendly tool for rock mass strength estimation. GEOENG 2000, Melbourne, Australia.

Mercer J (1909) Functions of Positive and Negative Type, and their Connection with the Theory of Integral Equations. Philos. Trans. R. Soc. A Math. Phys. Eng. Sci 209: 415–446. https://doi.org/10.1098/rsta.1909.0016.

Mohammad N, Reddish DJ, Stace LR (1997) The relation between in situ and laboratory rock properties used in numerical modelling International Journal of Rock Mechanics and Mining Sciences 34: 289–97

Mohan GM, Sheorey PR, Kushwaha A (2001) Numerical estimation of pillar strength in coal mines. International Journal of Rock Mechanics and Mining Sciences 38: 1185-1192

Morsy K (2003) Design consideration for longwall yield pillar stability. Ph.D. Thesis, West Virginia University, Morgantown, WV

Niu WJ, Feng ZK, Feng BF et al. (2019) Comparison of Multiple Linear Regression, Artificial Neural Network, Extreme Learning Machine, and Support Vector Machine in Deriving Operation Rule of Hydropower Reservoir. Water 11 (1): 88. https://doi.org/10.3390/w11010088

Obert L, Duvall WI (1967) Rock Mechanics and the Design of Structures in Rock. John Wiley and Sons, Inc., New York

Obi JC (2020) A Comparative Study of the Multiple Regression and Support Vector Regression. COOU Journal of Physical Sciences 3 (1): 465-473

Oraee K, Hosseini N, Gholinejad M (2010) Optimization of Chain Pillar Design in Longwall Mining Method. In: Proceedings of 29th International Conference on Ground Control in Mining. 29th International Conference on Ground Control in Mining, Morgantown, West Virginia, U.S.A. Morgantown, W. VA: Dept. of Mining Engineering, College of Engineering and Mineral Resources, West Virginia University.

Palchik V (1989) Analytical and empirical prognosis of rock foliation in rock masses. Journal of Coal Ukraine 7: 45–46

Palchik V (2002) Influence of physical characteristics of weak rock mass on height of Caved zone over abandoned subsurface coal mines. Environ Geol 42(1): 92–101

Pappas DM and Mark C (1993). Behaviour of simulated longwall gob material, RI 9458, United States Department of Interior, Bureau of Mines, Pittsburgh, PA, USA

Peng SS (1978) Coal mine ground control. New York, John Wiley & Sons, pp 181-182

Peng SS, Chiang HS (1984) Longwall Mining. John Wiley and Sons, Inc., New York.

Peng SS (1992) Surface Subsidence Engineering. The Society for Mining, Metallurgy and Exploration, New York

Peng SS (2006) Longwall mining, 2nd edn. Society for Mining, Metallurgy, and Exploration, Inc. (SME), Englewood

Pourhosseini O, Shabanimashcool M (2014) Development of an elasto-plastic constitutive model for intact rocks. International Journal of Rock Mechanics and Mining Sciences 66: 1-12

Prassetyo SH (2011) The Influence of Interface Friction and W/H Ratio in the Violence of Coal Specimen Failure. Master's thesis, Morgantown, WV: West Virginia University

Qian MG, He F (1989) Behaviour of the main roof in longwall mining. Weighting span, fracture and disturbance. Journal of Mine, Metals & Fuels, June-July: 240-246

Rashed G, Peng SS (2015) Change of the mode of failure by interface friction and width-to-height ratio of coal specimens. Journal of Rock Mechanics and Geotechnical Engineering 7(3): 256–65.

Reed G, Mctyer K, Frith R (2017) An assessment of coal pillar system stability criteria based on a mechanistic evaluation of the interaction between coal pillars and the overburden. International Journal of Mining Science and Technology 27 (1): 9-15

Rezaei M, Hossaini MF, Majdi A (2015a) A time-independent energy model to determine the height of destressed zone above the mined panel in longwall coal mining. Tunnelling and Underground Space Technology 47: 81–92

Rezaei M, Hossaini MF, Majdi A (2015b) Determination of longwall mining-induced stress using strain energy method. Rock Mechanics and Rock Engineering 48: 2421-2433

Rezaei M, Hossaini MF, Majdi A (2015c) Development of a time-dependent energy model to calculate the mining-induced stress over gates and pillars. Journal of Rock Mechanics and Geotechnical Engineering 7(3): 306-317

Russell S, Norvig P (2016) Artificial intelligence: a modern approach. Prentice Hall, Upper Saddle River, New Jersey

Sainsbury BL, Sainsbury DP (2017) Practical use of the ubiquitous-joint constitutive model for the simulation of anisotropic rock masses Rock Mechanics and Rock Engineering 50: 1507-1528

Salamon MDG, Munro AH (1967) A study of the strength of coal pillars. Journal of the Southern African Institute of Mining and Metallurgy 68:55-67

Salamon MDG, Wagner H (1985) Practical experiences in the design of coal pillars. In: Green AR (ed) Proceedings of the 21st International Conference of Safety in Mines Research Institutes, Sydney, Australia, 21–25 October

Salamon MGD (1990) Mechanism of caving in longwall coal mining. In: Hustrulid WA, Johnson G A (ed) Proceedings of 31st US Symposium: Rock mechanics contributions and challenges, Rotterdam, Balkema, pp 161–168

Saxena NC (2003) Subsidence management handbook. Scientific publisher (India), Jodhpur, India.

Seedsman R, Jalalifar H, Aziz N (2005) Chain pillar design – can we? In: Proceedings of the coal 2005: coal Operator's conference. University of Wollongong, Brisbane, pp 59–62

Shabanimashcool M, Li CC (2012) Numerical modelling of longwall mining and stability analysis of the gates in a coal mine. International Journal of Rock Mechanics and Mining Sciences 51:24–34

Sheorey PR (1993) Design of coal pillar arrays and chain pillars. In: Hudson JA (ed) Comprehensive rock engineering, vol. 2. Oxford: Pergamon, pp 631–670. https://doi.org/10.1016/B978-0-08-040615-2.50030-7

Sheorey PR (1994) **A** theory for in situ stresses in isotropic and transversely isotropic rock. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 31: 23–34

Sheorey PR, Das MN, Bordia SK, Singh B (1986) Pillar strength approaches based on a new failure criterion for coal seams. International Journal of Mining and Geological Engineering 4: 273-290

Sheorey PR (1997) Empirical rock failure criteria. Rotterdam: Balkema

Sheorey PR, Loui JP, Singh KB, Singh SK (2000) Ground subsidence observations and a modified influence function method for complete subsidence prediction. International Journal of Rock Mechanics and Mining Sciences 37: 801-818

Sheorey PR, Mohan GM, Sinha A (2001) Influence of elastic constants on the horizontal in situ stress. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 38: 1211–1216

Sheorey PR, Singh B (1974) Estimation of pillar loads in single and contiguous seam workings. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 11: 97-102

Sheorey PR, Singh TN, Singh B (1982a) Considerations for the stability of longwall chain pillars and adjacent roadway. In: Farmer IW (ed) Proceedings of the symposium on strata mechanics, Newcastle-upon-Tyne. Amsterdam: Elsevier, pp 129–133

Sheorey PR, Das MN, Singh B (1982b) A numerical procedure for rock pressure problems in level seams. In: Farmer IW (ed) Proceedings of the symposium on strata mechanics, Newcastle-upon-Tyne. Amsterdam: Elsevier, pp 254-259

Singh B (1973) Continuum characterization of jointed rock masses: Part I - The constitutive equations. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 10 (4): 311-335

Singh MM, Kendorski FS (1981) Strata disturbance prediction for mining beneath surface water and waste impoundments. In: Proceedings of 1st Conference on Ground Control in Mining, University of West Virginia, pp 76–89

Singh AK, Singh R, Maiti J, Kumar R, Mandal PK (2011) Assessment of mining induced stress development over coal pillars during depillaring. International Journal of Rock Mechanics and Mining Sciences 48: 805-818

Singh GSP, Singh UK (2004) Cavability assessment model for longwall workings in India. In: Proceedings of the third Asian rock mechanics symposium, Kyoto, 295-300

Singh GSP (2007) Cavability assessment and support load estimation for longwall workings in India. PhD Thesis. Department of Mining Engineering, Indian School of Mines, Dhanbad

Singh GSP, Singh UK (2009) A numerical modeling approach for assessment of progressive caving of strata and performance of hydraulic powered support in longwall workings. Computer and Geotechnics 36 (7): 1142-1156

Singh GSP, Singh UK (2010) Numerical modeling study of the effect of some critical parameters on caving behavior of strata and support performance in a longwall working. Rock Mechanics and Rock Engineering 43: 475-489

Singh GSP and Singh UK (2011) Assessment of goaf characteristics and compaction in longwall caving. Mining Technology-Transaction of the Institutions of Mining and Metallurgy: Section A, 120 (4): 222-232

Singh RP, Yadav RN (1995) Prediction of subsidence due to coal mining in Raniganj coalfield, West Bengal, India. Engineering Geology 39: 103-111

Sinha S, Walton G (2019a) Investigation of longwall headgate stress distribution with an emphasis on pillar behaviour. International Journal of Rock Mechanics and Mining Sciences 121: 104049

Sinha S, Walton G (2019b) Numerical analyses of pillar behavior with variation in yield criterion, dilatancy, rock heterogeneity and length to width ratio. Journal of Rock Mechanics and Geotechnical Engineering 11 (1): 46-60

Sheorey PR, Das MN, Barat D, Prasad RK, Singh B (1987) Coal pillar strength estimation from failed and stable cases. International Journal of Rock Mechanics and Mining Sciences 24(6):347–355

Shi Q, Xu G, Wang D, Li Z, Li W, Wang X (2021) Chain pillar optimization at a longwall coal mine based on field monitoring results and numerical model analysis. Arabian Journal of Geosciences 14 (23). DOI: 10.1007/s12517-021-08843-0

Smart BGD and Haley SM (1987) Further development of the roof strata tilt concept for pack design and the estimation of stress development in a caved waste. Mining Science and Technology 5: 121–130

Styler N (1984) Prediction of inter-strata movements above longwall faces. In: Proceedings of the 25th U.S. Symposium on Rock Mechanics (USRMS), June 25–27, Evanston, IL, Paper No. 84-0651. 8 pages.

Suchowerska AM, Carter JP, Merifield RS (2014) Horizontal stress under supercritical longwall panels. International Journal of Rock Mechanics and Mining Sciences 70: 240-251

Sweby G (1997) Review of the caving mechanism around high extraction systems and determine the effect of the mechanism on the safety of the system. Project No. Col.327, CSIRO MININGTEK

Tajduś K (2009) New method for determining the elastic parameters of rock mass layers in the region of underground mining influence. International Journal of Rock Mechanics and Mining Sciences 46 (8). https://doi.org/10.1016/j.ijrmms.2009.04.006.

Trueman R (1990) A finite element analysis for the establishment of stress development in coal mine caved waste. Mining Science and Technology 10: 247-252

Terzaghi K (1965) Theoretical Soil Mechanics, Third edition. John Wiley, New York

Turchaninov IA, Iofis MA, Kasparian EV (1977) Principles of rock mechanics. Nedra, Leningrad

Mark C, Bieniawski ZT (1986) An empirical method for the design of chain pillar for longwall mining. In: Proceedings of the 27th U.S. Symposium on Rock Mechanics (USRMS), Tuscaloosa, Alabama, pp 415-22

Tulu IB, Heasley KA (2012) Investigating abutment load. In: Proceedings of the 31st international conference on ground control in mining, Morgantown, WV, pp 28–37

Tuncay D, Tulu IB, Klemetti T (2021) Re-analysis of Abutment Angle Method for Moderate and Deep Cover Retreat Room and Pillar Mines and Investigation of Loading Mechanics Using Finite Volume Modeling. Rock Mechanics and Rock Engineering volume 54: 3447-3468. https://doi.org/10.1007/s00603-020-02336-4

Wagner H (1980) Pillar design in coal mines. Journal of the Southern African Institute of Mining and Metallurgy 80:37–45

Wagner H (1974) Determination characteristics of complete load deformation of coal pillars. In: Proceedings of 3rd I.S.R.M. Congress, Denver, pp 1076-1081

Wang H, Jiang Y, Xue S, Shen B, Wang C, Lv J, Yang T (2015) Assessment of excavation damaged zone around roadways under dynamic pressure induced by an active mining process. International Journal of Rock Mechanics and Mining Sciences 77: 265-177.

Wawersik WR, Fairhust C (1970) A study of brittle rock fracture in laboratory compression experiments. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 7 (5): 561–575

Whittaker BN (1983) Chain pillar design considerations with reference to longwall mining. Mining Department Magazine, vol. no. XXXV

Whittaker BN, Singh RN (1979) Evaluation of the design requirements and performance of gate roadways. Min Eng 138: 535–548

Wilson AH (1972a) Research into the determination of pillar size. Min. Eng. (London) 131: 409-416

Wilson AH (1972b) An Hypothesis Concerning Pillar Stability. Min. Eng. (London) 131 (141):409-4l7

Wilson AH (1980) The stability of underground workings in the soft rocks of the coal measures. Ph.D. thesis, University of Nottingham, UK

Wilson AH (1981). Stress, stability in coal ribsides and pillars. In: Proceedings of the First Conference on Ground Control in Mining, Morgantown, pp l–12

Wilson AH (1982) Pillar stability in longwall mining. In: Chugh YP, Kannis M (ed) State-of the-Art of Ground Control in Longwall Mining and Mining Subsidence, SME, New York, pp 85-95

Walton G (2019) Initial guidelines for the selection of input parameters for cohesion-weakening-friction-strengthening (CWFS) analysis of excavations in brittle rock. Tunnelling and Underground Space Technology 84: 189-200. https://doi.org/10.1016/j.tust.2018.11.019.

Walton G, Diederichs MS (2015) A New Model for the Dilation of Brittle Rocks Based on Laboratory Compression Test Data with Separate Treatment of Dilatancy Mobilization and Decay. Geotechnical and Geological Engineering volume 33, 661–679. https://doi.org/10.1007/s10706-015-9849-9

Wilson AH (1983) The stability of underground workings in the soft rocks of the coal measures. Int J Min Eng. (1), 91-187

Wyllie DC (1992) Foundations on Rock. Chapman and Hall, London

Wyllie DC, Norrish NI (1996) Rock strength properties and their measurement. In: Turner AK, Schuster RL (ed) Landslides: Investigation and Mitigation. Special Report 247. Transportation Research Board, The National Academies Press, Washington DC, 372-390. http://onlinepubs.trb.org/Onlinepubs/sr/sr247/sr247-014.pdf

Yadav A, Behera B, Sahoo SK et al. (2020a) An Approach for Numerical Modeling of Gob Compaction Process in Longwall Mining. Mining, Metallurgy & Exploration 37, 631–649. https://doi.org/10.1007/s42461-020-00182-0

Yadav A, Behera B, Sahoo SK et al. (2020b) Numerical Analysis of the Gob Stress Distribution Using a Modified Elastic Model as the Gob Constitutive Model. J. Inst. Eng. India Ser. D 101, 127–139. https://doi.org/10.1007/s40033-020-00214-5

Yan S, Bai J, Wang X, Huo L (2013) An innovative approach for gate road layout in highly gassy longwall top coal caving. International Journal of Rock Mechanics and Mining Sciences 59: 33-41. https://doi.org/10.1016/j.ijrmms.2012.11.007.

Yao XL, Reddish DJ, Whittaker BN (1993) Non-linear finite element analysis of surface subsidence arising from inclined seam extraction. International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstract 30 (4): 431-441.

Yavuz H (2004) An estimation method for cover pressure reestablishment distance and pressure distribution in the goaf of longwall coal mines. International Journal of Rock Mechanics and Mining Sciences 41, 193–205

Yu B, Zhang Z, Kuang T, Liu J (2016) Stress Changes and Deformation Monitoring of Longwall Coal Pillars Located in Weak Ground. Rock Mechanics and Rock Engineering 49: 3293-3305

Zhang YJ, Feng GR, Qi TY (2017a) Experimental research on internal behaviour of caved rocks under the uniaxial confined compression. Advances in Material Science and Engineering, vol. 2017, Article ID 6949264, 8 pages

Zhang GC, He FL, Jia HG, Lai YH (2017b) Analysis of Gateroad Stability in Relation to Yield Pillar Size: A Case Study. Rock Mechanics and Rock Engineering 50: 1263-1278

Zhang D, Fan G, Ma L, Wang X (2011) Aquifer protection during longwall mining of shallow coal seams: a case study in the Shendong Coalfield of China. International of Journal of Coal Geology 86 (2–3): 190–196

Zhang G, Liang S, Tan Y et al. (2018) Numerical modeling for longwall pillar design: a case study from a typical longwall panel in China Journal of Geophysics and Engineering 15 (1): 121–134. https://doi.org/10.1088/1742-2140/aa9ca4

Zisman WA (1933) Young's modulus and Poisson's ratio with reference to geophysical applications. Comparison of the statically and seismologically determined elastic constants of rocks. In: Proc US Natl Acad Sci, pp 653–86

Zhao XG, Cai M (2010) A mobilized dilation angle model for rocks. International Journal of Rock Mechanics and Mining Sciences 47: 368-384

Zhao Y, Liu S, Zhao GF, Elsworth D, Jiang Y, Han J (2014) Failure mechanisms in coal: Dependence on strain rate and microstructure, Journal of Geophysical Research: Solid Earth 119: 6924–6935, doi:10.1002/ 2014JB011198

Zhou Y (1991) Evaluating the impact of multi-seam mining on recoverable coal reserves in an adjacent seam. Virginia Division of Mineral Resources, Commonwealth of Virginia, Department of Mines, Minerals and Energy, Publication, 104

Annexure I

Properties of Rock Beds in Various Longwall Panels

Table AI.1 Properties of rock beds lying above W2 panel in RVII coal seam at Jhanjra mine ECL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	38.85	50	2261	34.03	2.7	6.43
Bed 8	Coal/shale	0.88	30	1904	28.47	3.2	2
Bed 7	Fgsst	0.92	37	2319	34.87	2.49	10.81
Bed 6	Intercalation	1.31	67	2353	36.26	2.96	11.24
Bed 5	Fgsst	0.69	96	2319	34.87	2.49	10.81
Bed 4	Mgsst	0.12	100	2243	27.06	2.08	8.39
Bed 3	Fgsst	1.75	75	2319	34.87	2.49	10.81
Bed 2	Sandy shale	0.64	30	2338	37.56	4.9	11.64
Bed 1	Mgsst	3.93	87	2243	27.06	2.08	8.39
Coal	**RVIIA seam**	4	40	1394	30	3	2

Table AI.2 Properties of rock beds lying above panel 1 in Passang seam at Balrampur mine SECL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
Bed 6	Weathered rock and soil	9	40	1700	8	0.08	2.48
Bed 5	Weathered rock	11	40	1862	14.5	2.2	4.5
Bed 4	Mgsst	14	75	2039	14.5	2.2	4.5
Bed 3	very cgsst	3.9	43	1955	13.9	1.4	4.31
Bed 2	Cgsst to mgsst	6.7	78	2023	17.1	1.4	5.3
Bed 1	Mgsst with shale lamination	5.5	40	2024	11	1.5	3.41
Coal	**Passang seam**	2.4	40	1400	23.8	2.5	2

Table AI.3 Properties of rock beds lying above panel K5 in Passang seam at New Kumda mine SECL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	20	40	1700	16.29	0.81	5.05
Bed 12	Cgsst	7.4	37	1955	16.29	0.81	5.05
Bed 11	Shaly sst	1.13	70	2280	19.02	1.69	5.89
Bed 10	Coal/Shale	1.48	32	1400	18.01	1.84	5.58
Bed 9	Mg-fgsst	9.27	70	2110	26.17	1.52	8.11
Bed 8	Cgsst	6.62	61	1955	16.29	0.81	5.05
Bed 7	sandy shale	3.01	58	2280	19.02	1.69	5.89

Bed 6	Cgsst	3.82	38	1955	16.29	0.81	5.05
Bed 5	Fg-mgsst	1.18	62	2110	26.17	1.52	8.11
Bed 4	Mg-cgsst	8.31	50	2023	21.23	1.08	6.58
Bed 3	Cgsst	5.31	63	1955	16.29	0.81	5.05
Bed 2	Cg-mgsst	2.41	79	2023	21.23	1.08	6.58
Bed 1	sandy shale	1.07	31	2280	19.02	1.69	5.89
Coal	**Passang seam**	2.2	40	1400	18.04	1.81	2

Table AI.4 Properties of rock beds lying above P2 panel in Burhar VIB seam at Rajendra mine SECL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
Bed 10	Soil	6	40	1600	1.96	0.2	0.61
Bed 9	Cgsst	23	40	2050	9.79	0.98	3.03
Bed 8	Fgsst	15	48	2200	27.5	2.75	8.53
Bed 7	Cgsst	3	78	2050	9.79	0.98	3.03
Bed 6	Coal	1	40	1400	20.58	1.96	2
Bed 5	Mgsst	5	40	2125	18.65	1.86	5.78
Bed 4	Cgsst	3	57	2050	9.79	0.98	3.03
Bed 3	Fgcgsst	3	86	2125	18.65	1.86	5.78
Bed 2	Cgsst	6	45	2050	9.79	0.98	3.03
Bed 1	Fgsst	9	56	2200	27.5	2.75	8.53
Coal	**Burhar VIB seam**	3	40	1400	20.58	1.96	2

Table AI.5 Properties of rock beds lying above panel 3 in Queen seam at JK 5 mine SCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
Bed 4	Overburden	156.7	80	2229	25.3	2.58	7.84
Bed 3	Shale, coal, carb shale	1.56	49	2200	33.91	3.87	7.83
Bed 2	Fg-cgsst	29.24	80	2229	25.3	2.58	7.84
Bed 1	Shale, coal, shaly coal	6.82	50	2218	33.46	3.83	9.74
Coal	**Queen seam**	15.68	47	1914	26.9	3.01	2

Table AI.6 Properties of rock beds lying above panel 21 in Top seam at PVK mine SCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	166.34	76	2050	12.46	1.07	3.86
Bed 8	Grey and carbonaceous clay	7.66	50	2050	12.46	1.07	3.86
Bed 7	Cgsst, GW	8.28	80	2050	12.46	1.07	3.86

Bed 6	Grey and carbonaceous clay	2	50	2050	12.46	1.07	3.86
Bed 5	Cgsst, GW, Pebble	12.49	78	2040	8.68	0.9	2.69
Bed 4	Cg to Fg sst	6.53	94	2060	12.93	1.15	4.01
Bed 3	Cgsst, GW, Pebble	3.7	77	2040	8.68	0.9	2.69
Bed 2	Cgsst, GW, Pebble	4	93	2040	8.68	0.9	2.69
Bed 1	Cgsst, GW	1.3	44	2050	12.46	1.07	3.86
Coal	**Top seam**	3	40	1400	23.16	1.54	2

Table AI.7 Properties of rock beds lying above panel 4 in Top seam at VK 7 mine SCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
Bed 15	Weathered rock	8.75	40	2000	2.93	0.54	0.91
Bed 14	Brown sst	4.57	70	2082	11.74	2.17	3.64
Bed 13	Clay	7.78	50	1790	11.45	1.3	3.55
Bed 12	Sandstone	51.58	70	2082	11.74	2.17	3.64
Bed 11	Clay	0.76	50	1790	11.45	1.3	3.55
Bed 10	Gray sst	70.1	70	2082	11.74	2.17	3.64
Bed 9	shale	1.52	60	2053	10.2	2.15	3.16
Bed 8	carb. Sst	2.13	60	2082	11.74	1.61	3.64
Bed 7	shalysst	3.96	62	2067	10.97	1.88	3.4
Bed 6	Gray sst	8.53	70	2082	11.74	2.17	3.64
Bed 5	Shale	2.44	65	2053	10.2	2.15	3.16
Bed 4	Gray sst	13.41	85	2082	11.74	2.17	3.64
Bed 3	Shale	1.07	60	2053	10.2	2.15	3.16
Bed 2	Gray sst	11.28	70	2082	11.74	2.17	3.64
Bed 1	Coal	8.52	40	1440	18.04	1.8	2
Coal	**Top seam**	2.7	40	1440	18.04	1.8	2

Table AI.8 Properties of rock beds lying above panel 1 in No. I seam at Adriyala mine SCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	263.67	50	2046	16.8	1.96	5.20
Bed 11	Cgsst	4.32	50	2046	16.8	1.96	5.20
Bed 10	Shalycoal	7.33	93	1592	7.10	0.60	2.20
Bed 9	Cgsst	5.74	88	2052	16.00	1.90	4.96
Bed 8	Cvcgsst	3.94	53	2030	12.45	0.80	3.86
Bed 7	Cvcgsst	3.23	90	2030	12.45	0.80	3.86
Bed 6	Shalycoal	6.43	85	1592	15.30	1.40	2.00
Bed 5	Mgsst	2.77	89	2081	21	2.80	6.51
Bed 4	Carb. Clay	0.73	89	1592	22.30	1.4	6.90
Bed 3	Mgsst	1.06	50	2136	22.50	2.8	6.96
Bed 2	Cvcgsst	21.36	91	2033	13.2	1	4.28
Bed 1	Shalycoal	2.42	43	1592	27.6	2.3	2
Coal	**Seam I**	3.5	40	1592	27.6	2.3	2

Table AI.9 Properties of rock beds lying above A4 panel in XVIII coal seam at Moonidih mine BCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	345.35					
Bed 13	Fgsst	3	73	2250	39.45	2.47	12.23
Bed 12	Intercalation	8.5	62	2074	44.72	4.46	13.86
Bed 11	Grittysst	8	63	2231	37.49	1.56	11.62
Bed 10	Intercalation	4.5	62	2074	44.72	4.46	13.86
Bed 9	Mgsst	1	65	2036	37.27	3.19	11.55
Bed 8	Coalshalycoal	0.81	40	1406	10.2	0.22	2
Bed 7	Cgsst	3.36	65	2031	13.03	0.75	4.04
Bed 6	Intercalation	5	62	2074	44.72	4.46	13.86
Bed 5	Mgsst	1	69	2036	37.27	3.19	11.55
Bed 4	Coalshalycoal	1.11	40	1406	10.2	0.22	2
Bed 3	Intercalation	4.23	62	2074	44.72	4.46	13.86
Bed 2	Shalycoal	1.65	40	1406	10.2	0.22	2
Bed 1	Intercalation	3.99	50	2074	44.72	4.46	13.86
Coal	**XVIII seam**	3.65	40	1406	10.2	0.22	2

Table AI.10 Properties of rock beds lying above panel D13 in XVI Top seam at Moonidih mine BCCL

	Rock type	Thickness (m)	RQD, %	Density, Kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
	Overburden	504.62	80	2797	66.11	10.15	8.44
Bed 25	Fgsst	2.31	88	2573	70.34	11.01	9.24
Bed 24	Fgsst	0.85	88	2573	70.34	11.01	9.24
Bed 23	Mgsst	0.95	95	2563	72.08	9.62	8.86
Bed 22	Fgcgsst	0.34	42	2553	73.82	8.24	8.47
Bed 21	Shale/shaly sandstone	0.39	30	2516	52.08	9.70	6.47
Bed 20	Fgsst	0.92	65	2573	70.34	11.01	9.24
Bed 19	Laminated bed of shale and sandstone	1.92	73	3323	59.05	9.44	7.45
Bed 18	Mgsst	1.32	95	2563	72.08	9.62	8.86
Bed 17	Fgsst	1.00	100	2573	70.34	11.01	9.24
Bed 16	Fgsst	0.72	91	2573	70.34	11.01	9.24
Bed 15	Shaly sandstone	0.60	28	2530	50.21	9.31	6.72
Bed 14	Fgsst	0.57	86	2573	70.34	11.01	9.24
Bed 13	Fgsst	0.32	39	2573	70.34	11.01	9.24
Bed 12	Shaly sandstone	0.32	40	2530	50.21	9.31	6.72
Bed 11	Fgsst	0.91	95	2573	70.34	11.01	9.24
Bed 10	Laminated bed of shale and sandstone	2.50	76	2518	51.75	9.63	6.50
Bed 9	Cgsst	1.12	74	2553	73.82	8.24	8.47
Bed 8	Cgsst	0.44	83	2553	73.82	8.24	8.47

Bed 7	Cgsst with shaly sandstone	0.49	91	2800	71.57	8.34	8.31
Bed 6	Cgsst	1.30	86	4015	73.82	8.24	8.47
Bed 5	Laminated bed of shale and sandstone	3.67	75	3844	56.11	10.07	6.74
Bed 4	Mgsst	2.17	88	253	72.08	9.62	8.86
Bed 3	Shale/shaly sandstone	0.51	40	2512	52.61	9.81	6.40
Bed 2	Mgsst	0.69	60	3429	72.08	9.62	8.86
Bed 1	Shale/shaly sandstone	3.66	59	3305	52.61	9.81	6.40
Coal	**XVI Top Seam**	2.47	40	1330	5.39	0.57	2

Table AI.11 Properties of rock beds lying above panel T3 in XV Top seam at Moonidih mine BCCL

	Rock type	Thickness (m)	RQD, %	Density, kg/m^3	σ_c, MPa	σ_t, MPa	Elastic Modulus (GPa)
Bed 36	Mgcgsst Micaceous	3	95	2624	40.35	8.98	12.51
Bed 35	Shaly sandstone	0.2	55	2599	45.63	9.92	14.15
Bed 34	Mgcgsst Micaceous with shale bands	3.3	96	2642	40.35	8.98	12.51
Bed 33	Intercalation	5.7	86	2558	45.1	9.51	13.98
Bed 32	Mgsst Micaceous	2.2	86	2601	48.68	9.49	15.09
Bed 31	Shaly sandstone	2.2	90	2582	46.06	9.81	14.28
Bed 30	Mgsst Micaceous	0.9	98	2601	48.68	9.49	15.09
Bed 29	Grey shale with coal streaks	1.8	81	2381	28.12	6.62	8.72
Bed 28	Mgsst Micaceous with shale lamination	1.6	83	2601	48.68	9.49	15.09
Bed 27	coal	1.1	100	1646	10.97	2.28	2
Bed 26	Mgsst Micaceous	1.4	86	2601	48.68	9.49	15.09
Bed 25	Shaly sandstone with shale intercalation	1.8	86	2591	45.17	9.98	14
Bed 24	Mgcgsst Micaceous	3.5	87	2624	40.35	8.98	12.51
Bed 23	Laminated bed of grey shale ,sst and sandy shale	18	93	2478	42.11	8.74	13.05
Bed 22	Mgsst Micaceous Sst	1.8	93	2601	48.68	9.49	15.09
Bed 21	Sandy shale	1.4	80	2517	45.77	8.96	14.19
Bed 20	Mgsst Micaceous	1.2	91	2601	48.68	9.49	15.09
Bed 19	Shaly sandstone	3.2	88	2498	43.69	9.14	13.54
Bed 18	Mgsst Micaceous with shale bands	1.9	99	2601	48.68	9.49	15.09
Bed 17	Grey shale with coal streaks	1.9	99	2361	26.94	6.27	8.35
Bed 16	Mgsst Micaceous with shale bands	0.8	74	2601	48.68	9.49	15.09

Bed 15	Cgsst micaceous with shale bands	2.2	83	2586	48.4	9.94	15
Bed 14	Fgmgsst Micaceous with shale bands	1.3	89	2631	57.74	10.71	17.9
Bed 13	Grey Shale	1.5	92	2463	39.17	7.84	12.14
Bed 12	Fgsst micaceous with shale bands	1.2	85	2681	69.94	10.34	21.68
Bed 11	Grey Shale	2.9	63	2486	41.97	8.32	13.01
Bed 10	Mgsst Micaceous with shale bands	2	90	2601	48.68	9.49	15.09
Bed 9	Grey shale	1.7	66	2417	33.35	6.85	10.34
Bed 8	Fgsst micaceous with shale bands	1.3	54	2681	69.94	10.34	21.68
Bed 7	Grey shale	2.9	44	2417	33.35	6.85	10.34
Bed 6	Mgsst with shale bands	2.9	79	2611	51.6	9.89	16
Bed 5	Grey shale	3.7	77	2442	36.53	7.39	11.32
Bed 4	Fg-mgsst Micaceous with laminated shale	1.9	88	2631	57.74	10.71	17.9
Bed 3	Mgsst micaceous with shale bands	2.2	81	2601	48.68	9.49	15.09
Bed 2	Fg-mgsst, micaceous with shale bands	1.2	83	2631	57.74	10.71	17.9
Bed 1	Grey shale, fractured	5.5	65	2417	33.3	6.385	10.32
Coal	**XV Top seam**	3.7	40	1471	5.88	1.25	2
Parting	Parting	3	81	2498	47.5	9.94	14.73
Coal	XV Bottom seam	3.7	40	1471	5.88	1.25	2

Annexure II

Identification of Caving Layers using RSI Approach

Roof Separation Index (RSI) Approach

The caving mechanism in the sedimentary rock formation majorly involves parting controlled caving. Singh (2004) developed an index to identify the prominent layers of roof separation within the caving zone, which is assumed to be 15 times the extraction height considering the worst possible bulking factor of 1.07. The roof layers outside this are assumed to not contribute significantly in the active caving and the loading on the powered supports with the progressive face advance. RSI incorporates six parameters, such as Uniaxial compressive strength (UCS), RQD, average core length (ACL), ground water condition, bed thickness, and rock type (Table AII.1). The first four parameters are similar to RMR of Bieniawski (1976), but only two cases representing extreme conditions associated with the ground water from Bieniaski (1976) classification are considered in RSI. The last two parameters have been incorporated based on field experience and engineering judgement of Singh (2004). The higher rating of RSI indicates more stable rock mass and vice-versa. The ratings conferred to these parameters are based on the detailed study of the caving behavior and the representative stratigraphy of the roof rocks in 30 longwall workings belonging to different Indian geo-mining conditions.

Table AII.1 Rating of RSI Parameters

Sl. No.	Parameter	Unit/ Rating	Rating distribution				
1	Uni-axial compressive strength	MPa	<5	5-25	25-50	>50	
		Rating	1	2	4	7	
2	RQD	%	<25	25-50	50-75	75-90	>90
		Rating	3	8	13	17	20
3	Average core length	cm	<5	5-30	30-100	100-300	
		Rating	5	10	20	25	
4	Ground water condition/wetness of strata	Condition	Dry	Watery formation			
		Rating	10	0			
5	Bed thickness	m	<1.5	1.5-2.5	2.5-3.5	3.5-4.5	>=4.5
		Rating	-28	-16	-12	-5	0
6	Rock formation of bed	Rock type	Sandstone	Others (shale, coal, clay, shaly coal)			
		Rating	0	-25			

The different rock beds as well as their formation are identified after analyzing the detailed lithology of the roof rocks superjacent to the coal seam. The RQD and ACL values of the identified rock beds are estimated based on the outcomes of the detailed logging of the core samples, while the strength values are determined from the laboratory tests. RSI of the rock beds are computed by taking the algebraic sum of the ratings of the six parameters based their values determined earlier. If the RSI of a rock bed is less than 14, it is considered to behave as a layer of separation within the series of rock beds superjacent to the coal seam. The properties of the roof layers identified thus are estimated by taking the thickness weighted average of the properties of the series of rock layers within their thickness.

The phrase "**immediate roof**" is used in this work to represent a roof layer immediately above the coal seam to be mined. Depending upon its thickness, lamination and strength, it is either amenable to cave after the support advance or overhangs to a significant length in the goaf leading to the loading of the face support. The "immediate roof" and "immediate caving roof" are two distinct entities herein, which can be the same in the case where the roof layer is thin, laminated and weak. On the other hand, if the "immediate roof" layer is thick and competent, the "immediate caving roof" may only be a portion of the former, and in extreme caving

conditions, the thickness of the latter may even become zero. In the case where the portion of the coal is left in the roof while mining the thick coal seam, the coal roof may act as "immediate caving roof" owing to its easy caving characteristics.

The phrase "**main roof**" is used to represent the roof layer just above the "immediate roof". The failure of this roof layer in the large span, as conceptualized, results into the loading of the face supports leading to convergence at the face as well as concentration of high stress in the abutment zone during the main fall and periodic caving period of these strata. The "main roof" may either comprised of a single layer or a series of more than one layers which may separate from each other at the time of progressive caving.

The term "**overburden**" is used to represent the strata above the "main roof" layer. It may either consist of a single layer or a series of layer. The parting of these layers are not simulated when they lie at height greater than 15 times the extraction height from the roof line as they would not contribute to the loading of the face supports directly. The "overburden" layers settle over the caved goaf gradually behind a certain distance from the progressively advancing face.

Post-failure softening parameters of the calibrated laboratory scale models of the coal specimens

Table AIII.1 The final values of cohesion and friction angle drop rates and their residual values of coal samples of different w/h ratios from six Indian seams

Seam	w/h	Zone size (m)	$*c_{Drop}$	$*c_{res}$	$*\phi_{Drop}$ (%)	$*\phi_{res}$ (%)
Uchitdih	0.5	2	50	0	300	50
	0.5	1	20	0	300	50
	0.5	0.5	10	0	300	50
	1	2	50	0	300	50
	1	1	20	0	300	50
	1	0.5	10	0	300	50
	2	2	30	0	100	50
	2	1	20	0	100	50
	2	0.5	10	0	100	50
	3	2	30	0	100	50
	3	1	20	0	100	50
	3	0.5	10	0	100	50
	4.5	2	20	15	300	70
	4.5	1	20	15	300	70
	4.5	0.5	10	5	300	50
	6.75	2	30	15	300	70
	6.75	1	30	15	300	70
	6.75	0.5	20	15	100	50
	9	2	20	15	300	70
	9	1	20	15	300	70
	9	0.5	15	15	100	70
	13.5	2	20	15	300	70
	13.5	1	20	15	300	70
	13.5	0.5	15	15	100	70
Singhpur (middle)	0.5	2	110	0	300	50
	0.5	1	50	0	300	50
	0.5	0.5	20	0	300	50
	1	2	110	0	300	50
	1	1	50	0	300	50
	1	0.5	20	0	300	50
	2	2	110	5	300	50
	2	1	50	5	300	50
	2	0.5	30	0	300	50
	3.2	2	190	15	300	50
	3.2	1	130	15	300	50
	3.2	0.5	70	5	300	50
	4.5	2	170	20	300	70
	4.5	1	130	20	300	70
	4.5	0.5	60	15	300	70
	7.7	2	170	15	300	70
	7.7	1	170	15	300	70
	7.7	0.5	100	15	500	70
	9	2	150	15	500	70
	9	1	130	15	500	70
	9	0.5	70	15	500	70
	13.5	2	150	15	500	70

	13.5	1	130	15	500	70
	13.5	0.5	70	15	500	70
	2	2	50	0	100	50
	2	1	30	0	100	50
	2	0.5	10	0	100	50
	3	2	50	5	300	50
	3	1	30	5	300	50
	3	0.5	10	5	100	50
	4.5	2	30	20	300	50
	4.5	1	20	20	300	50
Jambad	4.5	0.5	15	10	100	50
(top)	6.75	2	30	20	300	50
	6.75	1	20	20	300	50
	6.75	0.5	10	15	300	50
	9	2	30	20	300	50
	9	1	30	20	300	50
	9	0.5	15	20	300	50
	13.5	2	30	20	300	50
	13.5	1	30	20	300	50
	13.5	0.5	15	20	300	50
	2	2	70	0	100	50
	2	1	50	0	100	50
	2	0.5	25	0	100	50
	3	2	70	5	300	70
	3	1	30	5	300	70
	3	0.5	15	5	300	70
	4.5	2	130	5	500	70
	4.5	1	90	5	500	70
	4.5	0.5	40	5	500	70
Kargali	6.75	2	130	20	100	70
	6.75	1	110	20	100	70
	6.75	0.5	70	15	100	70
	9	2	90	20	300	70
	9	1	90	20	300	70
	9	0.5	50	20	300	70
	13.5	2	90	20	300	70
	13.5	1	90	20	300	70
	13.5	0.5	50	20	300	70
	0.5	2	130	0	500	70
	0.5	1	90	0	500	70
	0.5	0.5	40	0	500	50
	1	2	130	0	500	70
	1	1	90	0	500	70
	1	0.5	40	0	500	50
	2	2	130	0	300	50
	2	1	90	0	300	50
Kenda	2	0.5	40	0	300	50
	3	2	90	5	300	70
	3	1	50	5	300	70
	3	0.5	30	5	300	50
	4.5	2	90	10	500	70
	4.5	1	70	10	500	70
	4.5	0.5	40	10	300	50
	6.75	2	90	10	300	70
	6.75	1	70	10	300	70
	6.75	0.5	40	10	300	70

	9	2	90	10	300	70
	9	1	90	10	300	70
	9	0.5	40	10	300	70
	13.5	2	90	10	300	70
	13.5	1	90	10	300	70
	13.5	0.5	40	10	300	70
XII	2	2	30	0	300	50
	2	1	10	0	300	50
	2	0.5	5	0	100	50
	3	2	30	5	500	50
	3	1	20	5	500	50
	3	0.5	10	5	500	50
	4.5	2	30	15	300	70
	4.5	1	20	15	300	70
	4.5	0.5	10	10	300	70
	6.75	2	50	15	300	70
	6.75	1	30	15	300	70
	6.75	0.5	15	15	300	70
	9	2	30	15	300	70
	9	1	30	15	300	70
	9	0.5	25	15	100	70
	13.5	2	30	15	300	70
	13.5	1	30	15	300	70
	13.5	0.5	25	15	100	70

*Note that drop rates are in per unit plastic shear strain and residual values are in terms of the percentage of their peak values.

Annexure IV

Parametric Modelling Results of Abutment Angle Models

Table AIV.1 Parametric modelling results of the three-dimensional models for determining the abutment angle

Experiment no.	Strata condition	Depth (m)	Face Length (m)	Thickness ratio (T_R)	Abutment angle (°)
1	Soft strata (σ_{CIR} = 4.01 MPa, σ_{CMR} = 4.11 MPa, σ_{TIR} = 0.97 MPa, σ_{TMR} = 1.07 MPa, E_{IR} = 3.01 GPa, E_{MR} = 3.86 GPa, RQD_{IR} = 47 %, RQD_{MR} = 57%)[1]	350	150	2.0	12
2		350	150	1.0	13
3		350	150	0.5	6
4		350	200	2.0	2
5		350	200	1.0	8
6		350	200	0.5	1
7		350	250	2.0	2
8		350	250	1.0	3
9		350	250	0.5	1
10		600	150	2.0	2
11		600	150	1.0	8
12		600	150	0.5	1
13		600	200	2.0	3
14		600	200	1.0	5
15		600	200	0.5	1
16		600	250	2.0	1
17		600	250	1.0	3
18		600	250	0.5	1
19		900	150	2.0	1
20		900	150	1.0	3
21		900	150	0.5	1
22		900	200	2.0	1
23		900	200	1.0	2
24		900	200	0.5	1
25		900	250	2.0	1
26		900	250	1.0	1
27		900	250	0.5	1
28	Medium strata (σ_{IR} = 11.68 MPa, σ_{MR} = 13.05 MPa, σ_{TIR} = 3.21 MPa, σ_{TMR} = 3.47 MPa, E_{IR} = 8.5 GPa, E_{MR} = 8.93 GPa, RQD_{IR} = 76%, RQD_{MR} = 81%)[1]	350	150	2.0	25
29		350	150	1.0	55
30		350	150	0.5	20
31		350	200	2.0	12
32		350	200	1.0	38
33		350	200	0.5	6
34		350	250	2.0	12
35		350	250	1.0	32
36		350	250	0.5	8
37		600	150	2.0	12
38		600	150	1.0	25
39		600	150	0.5	8
40		600	200	2.0	7
41		600	200	1.0	18
42		600	200	0.5	3

43		600	250	2.0	5
44		600	250	1.0	10
45		600	250	0.5	2
46		900	150	2.0	5
47		900	150	1.0	13
48		900	150	0.5	5
49		900	200	2.0	7
50		900	200	1.0	10
51		900	200	0.5	2
52		900	250	2.0	2
53		900	250	1.0	3
54		900	250	0.5	2
55	Hard strata (σ_{IR} = 20.92 MPa, σ_{MR} = 17.58 MPa, σ_{TIR} = 5.0 MPa, σ_{TMR} = 5.55 MPa, E_{IR} = 13.37 GPa, E_{MR} = 13 GPa, RQD_{IR} = 97%, RQD_{MR} = 98%)[1]	350	150	2.0	67
56		350	150	1.0	70
57		350	150	0.5	40
58		350	200	2.0	60
59		350	200	1.0	48
60		350	200	0.5	46
61		350	250	2.0	27
62		350	250	1.0	53
63		350	250	0.5	30
64		600	150	2.0	15
65		600	150	1.0	38
66		600	150	0.5	10
67		600	200	2.0	28
68		600	200	1.0	32
69		600	200	0.5	6
70		600	250	2.0	12
71		600	250	1.0	30
72		600	250	0.5	10
73		900	150	2.0	8
74		900	150	1.0	27
75		900	150	0.5	3
76		900	200	2.0	9
77		900	200	1.0	15
78		900	200	0.5	5
79		900	250	2.0	5
80		900	250	1.0	13
81		900	250	0.5	2

[1] σ_{CMR} is the compressive strength of the main roof, σ_{CIR} is the compressive strength of the immediate roof, σ_{TMR} is the tensile strength of the main roof, σ_{TIR} is the tensile strength of the immediate roof; RQD_{MR} is the Rock Quality Designation of the main roof; RQD_{IR} is the Rock Quality Designation of the immediate roof; E_{MR} is the deformation modulus of the main roof; E_{IR} is the deformation modulus of the immediate roof

Annexure V

Distribution of Vertical Stress at the Seam Level of the Four Subcritical and Four Supercritical Workings

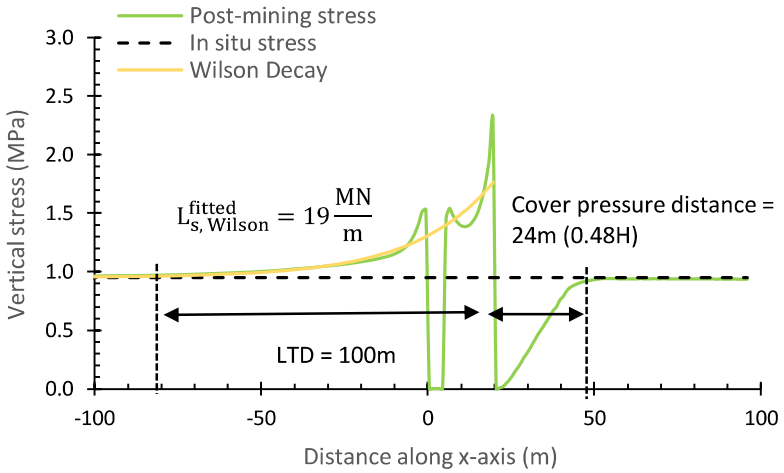

Figure AV.1 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'B'

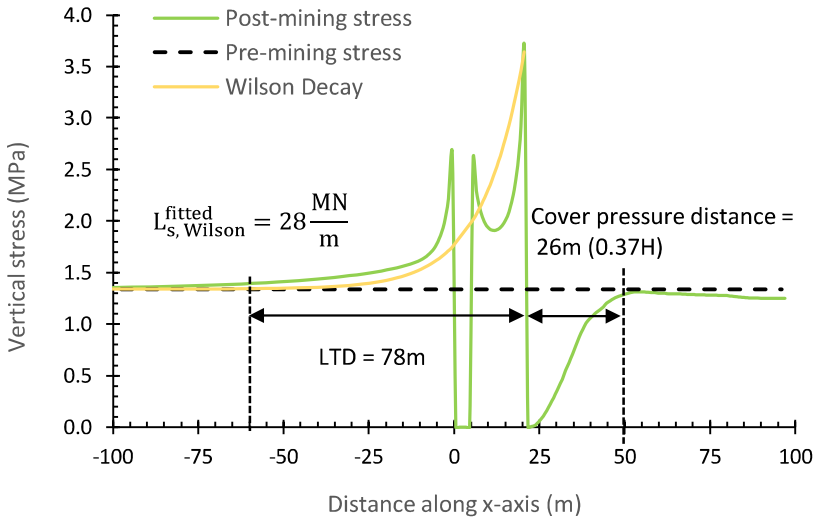

Figure AV.2 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'C'

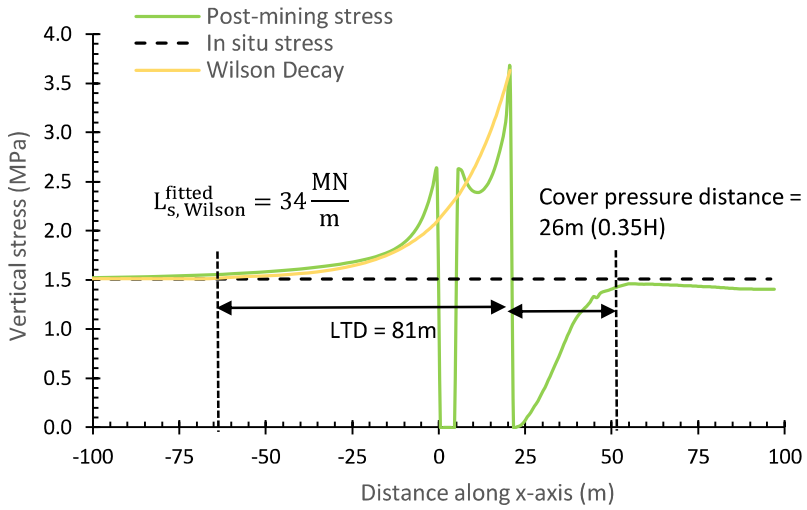

Figure AV.3 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'D'

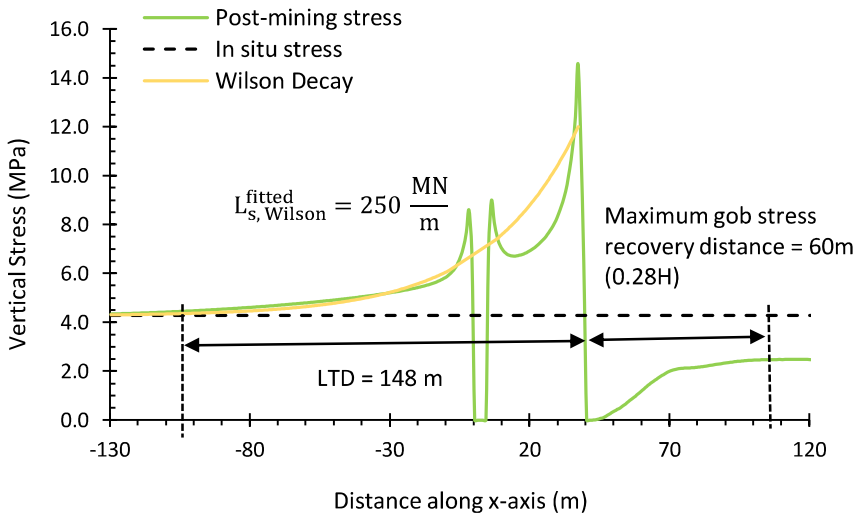

Figure AV.4 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'Q'

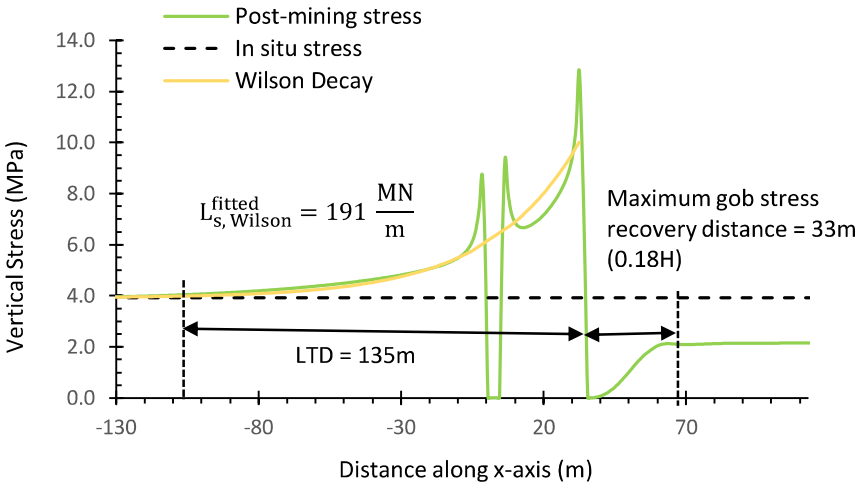

Figure AV.5 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'R'

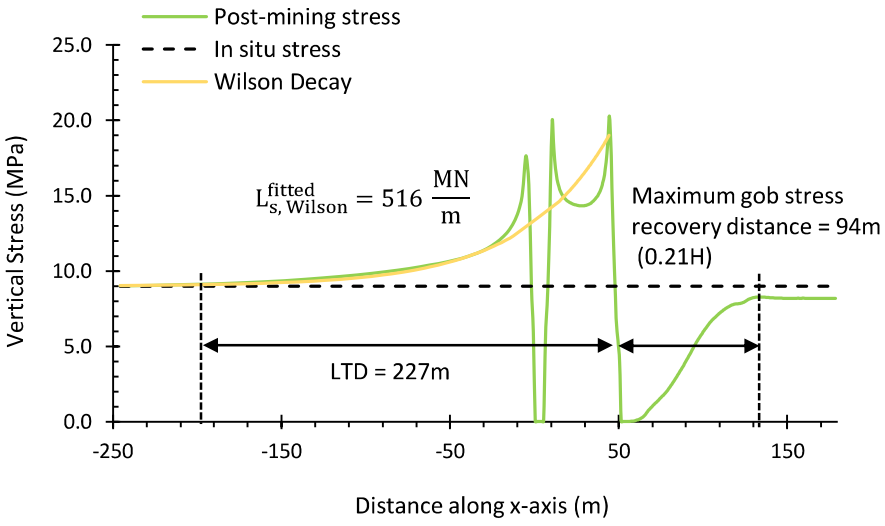

Figure AV.6 Distribution of vertical stress at the seam level at the pre-mining stage (black dotted line), post-mining stage (solid green line), and Wilson's (1983) abutment stress decay curve fitted to the model abutment stress profile (solid yellow line) for Working 'S'

Annexure VI

Parametric Modelling Results of Model I

Table AVI.1 Parametric modelling results of the plain-strain models for determining the factor of safety of the single row chain pillar

Experiment no.	[1] w (m)	[2] h (m)	[3] H (m)	[4] Fl (m)	[5] β (°)	[6] σ_C (MPa)	[7] $\frac{E_R}{E_C}$	[8] $\frac{E_F}{E_C}$	[9] H_C (m)	[10] E_{OB} (GPa)	[11] ρ_{OB} (kg/m3)	[12] Fo S
1	25	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	0.42
2	25	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	0.54
3	25	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	0.65
4	48	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	1.13
5	48	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	1.31
6	48	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	1.54
7	75	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	1.95
8	75	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	2.25
9	75	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	2.65
10	100	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	2.56
11	100	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	3
12	100	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	3.54
13	25	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	0.42
14	25	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	0.52
15	25	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	0.64
16	48	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	1.11
17	48	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	1.28
18	48	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	1.51
19	75	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	1.91
20	75	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	2.2
21	75	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	2.59
22	100	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	2.53
23	100	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	2.92
24	100	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	3.45
25	25	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	0.43
26	25	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	0.54
27	25	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	0.66
28	48	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	1.1
29	48	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	1.28
30	48	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	1.5
31	75	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	1.89
32	75	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	2.17
33	75	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	2.56
34	100	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	2.51

35	100	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	2.9
36	100	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	3.42
37	25	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	0.33
38	25	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	0.43
39	25	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	0.56
40	48	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	0.82
41	48	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	0.96
42	48	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	1.16
43	75	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	1.6
44	75	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	1.85
45	75	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	2.19
46	100	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	2.19
47	100	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	2.54
48	100	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	3
49	25	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	0.31
50	25	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	0.4
51	25	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	0.53
52	48	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	0.81
53	48	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	0.95
54	48	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	1.13
55	75	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	1.55
56	75	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	1.8
57	75	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	2.12
58	100	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	2.14
59	100	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	2.47
60	100	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	2.92
61	25	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	0.3
62	25	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	0.41
63	25	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	0.53
64	48	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	0.8
65	48	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	0.94
66	48	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	1.13
67	75	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	1.53
68	75	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	1.76
69	75	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	2.08
70	100	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	2.1
71	100	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	2.42
72	100	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	2.86
73	25	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	0.23
74	25	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	0.36
75	25	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	0.52
76	48	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	0.42
77	48	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	0.54
78	48	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	0.68
79	75	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	1.02
80	75	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	1.2

81	75	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	1.44
82	100	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	1.54
83	100	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	1.8
84	100	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	2.14
85	25	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.21
86	25	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	0.36
87	25	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	0.51
88	48	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.38
89	48	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	0.5
90	48	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	0.62
91	75	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.98
92	75	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	1.15
93	75	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	1.38
94	100	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	1.44
95	100	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	1.68
96	100	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	2
97	25	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.19
98	25	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	0.41
99	25	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	0.59
100	48	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.35
101	48	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	0.48
102	48	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	0.6
103	75	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.92
104	75	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	1.09
105	75	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	1.31
106	100	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	1.34
107	100	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	1.57
108	100	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	1.87
109	25	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	1
110	25	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	1.09
111	25	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	1.2
112	48	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	1.51
113	48	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	1.67
114	48	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	1.89
115	75	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	1.96
116	75	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	2.21
117	75	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	2.54
118	100	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	2.34
119	100	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	2.65
120	100	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	3.09
121	25	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	0.97
122	25	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	1.05
123	25	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	1.16
124	48	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	1.45
125	48	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	1.61
126	48	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	1.82

127	75	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	1.9
128	75	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	2.14
129	75	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	2.46
130	100	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	2.28
131	100	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	2.59
132	100	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	3
133	25	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	0.95
134	25	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	1.03
135	25	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	1.13
136	48	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	1.43
137	48	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	1.59
138	48	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	1.79
139	75	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	1.89
140	75	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	2.13
141	75	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	2.45
142	100	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	2.27
143	100	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	2.58
144	100	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	3
145	25	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	0.92
146	25	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	1
147	25	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	1.1
148	48	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	1.39
149	48	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	1.54
150	48	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	1.74
151	75	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	1.81
152	75	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	2.03
153	75	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	2.33
154	100	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	2.15
155	100	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	2.43
156	100	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	2.82
157	25	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	0.87
158	25	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	0.94
159	25	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	1.04
160	48	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	1.34
161	48	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	1.47
162	48	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	1.66
163	75	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	1.74
164	75	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	1.95
165	75	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	2.24
166	100	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	2.08
167	100	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	2.35
168	100	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	2.72
169	25	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	0.85
170	25	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	0.92
171	25	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	1.01
172	48	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	1.33

173	48	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	1.46
174	48	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	1.65
175	75	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	1.74
176	75	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	1.95
177	75	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	2.23
178	100	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	2.07
179	100	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	2.34
180	100	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	2.71
181	25	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	0.79
182	25	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	0.86
183	25	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	0.96
184	48	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	1.29
185	48	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	1.43
186	48	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	1.62
187	75	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	1.68
188	75	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	1.88
189	75	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	2.16
190	100	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	1.97
191	100	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	2.23
192	100	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	2.57
193	25	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	0.6
194	25	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	0.65
195	25	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	0.73
196	48	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	1.13
197	48	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	1.24
198	48	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	1.38
199	75	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	1.47
200	75	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	1.63
201	75	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	1.86
202	100	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	1.75
203	100	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	1.96
204	100	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	2.25
205	25	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	0.55
206	25	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	0.6
207	25	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	0.67
208	48	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	1.09
209	48	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	1.19
210	48	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	1.33
211	75	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	1.45
212	75	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	1.61
213	75	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	1.83
214	100	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	1.72
215	100	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	1.92
216	100	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	2.21
217	25	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	1.09
218	25	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	1.18

219	25	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	1.31
220	48	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	1.56
221	48	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	1.72
222	48	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	1.96
223	75	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	1.99
224	75	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	2.24
225	75	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	2.58
226	100	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	2.35
227	100	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	2.67
228	100	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	3.1
229	25	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.02
230	25	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	1.09
231	25	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	1.2
232	48	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.44
233	48	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	1.58
234	48	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	1.78
235	75	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.85
236	75	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	2.07
237	75	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	2.37
238	100	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	2.18
239	100	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	2.46
240	100	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	2.85
241	25	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1
242	25	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	1.07
243	25	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	1.17
244	48	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1.41
245	48	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	1.55
246	48	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	1.74
247	75	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1.8
248	75	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	2
249	75	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	2.3
250	100	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	2.14
251	100	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	2.42
252	100	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	2.8
253	25	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.04
254	25	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	1.13
255	25	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	1.24
256	48	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.5
257	48	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	1.66
258	48	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	1.88
259	75	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.91
260	75	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	2.15
261	75	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	2.47
262	100	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	2.25
263	100	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	2.55
264	100	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	2.97

265	25	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	0.97
266	25	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	1.04
267	25	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	1.13
268	48	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	1.37
269	48	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	1.5
270	48	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	1.68
271	75	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	1.72
272	75	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	1.92
273	75	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	2.19
274	100	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	2.04
275	100	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	2.29
276	100	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	2.64
277	25	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	0.93
278	25	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	0.99
279	25	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	1.08
280	48	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.31
281	48	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	1.43
282	48	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	1.6
283	75	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.66
284	75	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	1.85
285	75	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	2.1
286	100	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.96
287	100	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	2.21
288	100	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	2.54
289	25	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	0.9
290	25	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	0.98
291	25	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	1.09
292	48	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	1.37
293	48	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	1.52
294	48	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	1.72
295	75	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	1.75
296	75	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	1.96
297	75	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	2.25
298	100	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	2.04
299	100	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	2.31
300	100	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	2.68
301	25	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	0.85
302	25	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	0.91
303	25	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	1
304	48	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	1.25
305	48	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	1.37
306	48	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	1.53
307	75	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	1.56
308	75	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	1.74
309	75	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	1.98
310	100	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	1.81

311	100	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	2.03
312	100	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	2.33
313	25	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	0.78
314	25	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	0.83
315	25	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	0.9
316	48	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	1.16
317	48	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	1.26
318	48	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	1.39
319	75	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	1.45
320	75	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	1.6
321	75	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	1.8
322	100	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	1.68
323	100	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	1.87
324	100	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	2.13
325	48	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	1.15
326	48	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	0.945
327	48	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	0.949
328	75	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	1.92
329	75	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	1.52
330	75	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	1.45
331	100	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	2.46
332	100	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	1.9
333	100	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	1.76
334	48	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	1.13
335	48	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	0.96
336	48	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	0.97
337	75	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	1.91
338	75	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	1.52
339	75	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	1.46
340	100	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	2.47
341	100	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	1.9
342	100	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	1.76
343	48	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	1.15
344	48	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	0.93
345	48	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	0.98
346	75	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	1.92
347	75	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	1.51
348	75	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	1.47
349	100	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	2.47
350	100	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	1.89
351	100	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	1.78
352	48	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	0.87
353	48	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	0.72
354	48	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	0.71
355	75	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	1.6
356	75	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	1.26

357	75	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	1.21
358	100	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	2.14
359	100	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	1.64
360	100	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	1.54
361	48	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	0.84
362	48	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	0.73
363	48	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	0.72
364	75	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	1.57
365	75	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	1.26
366	75	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	1.22
367	100	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	2.11
368	100	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	1.65
369	100	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	1.54
370	48	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	0.88
371	48	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	0.71
372	48	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	0.72
373	75	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	1.61
374	75	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	1.26
375	75	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	1.23
376	100	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	2.14
377	100	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	1.64
378	100	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	1.55
379	48	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.27
380	48	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.2
381	48	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.38
382	75	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.94
383	75	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.74
384	75	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.73
385	100	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	1.42
386	100	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	1.08
387	100	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	1.07
388	48	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.45
389	48	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.38
390	48	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.38
391	75	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.92
392	75	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.72
393	75	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.72
394	100	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	1.4
395	100	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	1.07
396	100	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	1.05
397	48	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.47
398	48	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.39
399	48	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.38
400	75	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.95
401	75	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.72
402	75	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.73

403	100	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	1.41
404	100	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	1.12
405	100	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	1.06
406	25	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	0.51
407	25	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	0.39
408	25	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	0.35
409	25	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	0.49
410	25	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	0.39
411	25	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	0.36
412	25	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	0.49
413	25	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	0.37
414	25	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	0.36
415	25	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	0.43
416	25	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	0.32
417	25	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	0.3
418	25	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	0.42
419	25	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	0.32
420	25	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	0.3
421	25	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	0.41
422	25	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	0.3
423	25	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	0.29
424	25	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.45
425	25	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.32
426	25	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.27
427	25	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.44
428	25	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.31
429	25	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.27
430	25	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.43
431	25	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.26
432	25	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.29
433	48	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	1.45
434	48	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	1.11
435	48	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	0.995
436	75	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	1.94
437	75	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	1.48
438	75	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	1.34
439	100	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	2.29
440	100	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	1.73
441	100	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	1.56
442	48	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	1.43
443	48	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	1.098
444	48	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	0.98
445	75	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	1.91
446	75	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	1.46
447	75	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	1.33
448	100	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	2.26

449	100	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	1.71
450	100	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	1.55
451	48	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	1.41
452	48	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	1.08
453	48	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	0.98
454	75	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	1.9
455	75	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	1.46
456	75	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	1.34
457	100	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	2.26
458	100	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	1.71
459	100	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	1.56
460	48	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	1.3
461	48	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	0.99
462	48	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	0.86
463	75	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	1.76
464	75	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	1.35
465	75	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	1.21
466	100	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	2.1
467	100	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	1.6
468	100	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	1.44
469	48	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	1.27
470	48	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	0.98
471	48	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	0.85
472	75	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	1.72
473	75	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	1.34
474	75	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	1.2
475	100	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	2.06
476	100	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	1.58
477	100	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	1.42
478	48	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	1.24
479	48	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	0.95
480	48	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	0.84
481	75	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	1.69
482	75	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	1.31
483	75	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	1.19
484	100	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	2.04
485	100	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	1.56
486	100	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	1.42
487	48	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	1.07
488	48	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	0.65
489	48	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.54
490	75	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	1.49
491	75	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	1.05
492	75	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.92
493	100	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	1.78
494	100	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	1.29

495	100	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	1.14
496	48	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	0.96
497	48	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	0.62
498	48	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.51
499	75	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	1.41
500	75	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	1.02
501	75	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.92
502	100	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	1.72
503	100	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	1.27
504	100	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	1.13
505	48	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	0.92
506	48	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	0.62
507	48	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.5
508	75	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	1.35
509	75	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	1
510	75	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.91
511	100	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	1.67
512	100	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	1.25
513	100	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	1.13
514	25	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	0.85
515	25	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	0.57
516	25	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	0.49
517	25	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	0.8
518	25	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	0.56
519	25	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	0.48
520	25	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	0.79
521	25	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	0.55
522	25	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	0.48
523	25	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	0.71
524	25	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	0.5
525	25	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	0.43
526	25	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	0.67
527	25	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	0.47
528	25	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	0.4
529	25	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	0.64
530	25	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	0.43
531	25	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	0.39
532	25	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	0.48
533	25	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	0.34
534	25	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.3
535	25	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	0.44
536	25	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	0.32
537	25	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.3
538	25	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	0.41
539	25	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	0.32
540	25	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.28

541	48	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.46
542	48	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	1.2
543	48	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	1.098
544	75	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.84
545	75	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	1.49
546	75	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	1.36
547	100	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	2.12
548	100	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	1.69
549	100	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	1.54
550	48	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.44
551	48	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	1.19
552	48	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	1.09
553	75	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.82
554	75	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	1.48
555	75	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	1.35
556	100	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	2.11
557	100	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	1.68
558	100	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	1.53
559	48	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	1.42
560	48	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	1.18
561	48	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	1.08
562	75	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	1.8
563	75	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	1.47
564	75	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	1.35
565	100	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	2.1
566	100	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	1.68
567	100	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	1.53
568	48	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.38
569	48	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	1.1
570	48	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	0.993
571	75	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.73
572	75	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	1.38
573	75	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	1.26
574	100	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.99
575	100	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	1.57
576	100	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	1.44
577	48	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.32
578	48	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	1.08
579	48	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	0.98
580	75	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.68
581	75	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	1.36
582	75	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	1.25
583	100	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.95
584	100	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	1.56
585	100	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	1.43
586	48	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.31

587	48	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	1.07
588	48	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	0.99
589	75	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.66
590	75	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	1.35
591	75	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	1.25
592	100	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.94
593	100	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	1.55
594	100	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	1.42
595	48	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	1.3
596	48	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	0.93
597	48	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	0.78
598	75	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	1.63
599	75	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	1.21
600	75	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	1.06
601	100	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	1.87
602	100	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	1.38
603	100	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	1.22
604	48	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	1.16
605	48	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	0.84
606	48	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	0.72
607	75	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	1.45
608	75	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	1.14
609	75	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	1.02
610	100	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	1.68
611	100	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	1.33
612	100	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	1.195
613	48	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	1.11
614	48	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	0.82
615	48	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	0.72
616	75	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	1.41
617	75	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	1.12
618	75	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	1.01
619	100	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	1.64
620	100	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	1.306
621	100	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	1.187
622	25	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.02
623	25	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	0.79
624	25	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	0.68
625	25	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.01
626	25	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	0.74
627	25	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	0.67
628	25	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	0.99
629	25	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	0.75
630	25	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	0.66
631	25	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	0.97
632	25	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	0.69

633	25	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	0.59
634	25	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	0.92
635	25	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	0.62
636	25	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	0.54
637	25	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	0.9
638	25	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	0.61
639	25	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	0.54
640	25	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	0.86
641	25	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	0.48
642	25	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	0.39
643	25	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	0.72
644	25	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	0.42
645	25	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	0.36
646	25	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	0.63
647	25	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	0.38
648	25	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	0.35
649	48	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	0.992
650	48	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	0.834
651	48	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	0.844
652	75	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	1.66
653	75	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	1.35
654	75	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	1.3
655	100	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	2.13
656	100	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	1.68
657	100	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	1.57
658	48	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	0.98
659	48	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	0.84
660	48	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	0.86
661	75	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	1.65
662	75	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	1.35
663	75	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	1.31
664	100	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	2.13
665	100	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	1.68
666	100	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	1.58
667	48	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	0.998
668	48	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	0.82
669	48	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	0.88
670	75	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	1.66
671	75	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	1.34
672	75	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	1.32
673	100	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	2.13
674	100	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	1.68
675	100	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	1.6
676	48	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	0.74
677	48	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	0.63
678	48	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	0.62

679	75	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	1.38
680	75	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	1.12
681	75	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	1.09
682	100	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	1.84
683	100	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	1.46
684	100	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	1.38
685	48	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	0.72
686	48	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	0.64
687	48	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	0.63
688	75	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	1.36
689	75	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	1.13
690	75	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	1.1
691	100	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	1.83
692	100	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	1.47
693	100	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	1.38
694	48	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	0.75
695	48	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	0.61
696	48	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	0.64
697	75	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	1.39
698	75	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	1.11
699	75	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	1.1
700	100	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	1.85
701	100	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	1.46
702	100	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	1.39
703	48	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.39
704	48	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.31
705	48	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.3
706	75	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.8
707	75	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.65
708	75	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.65
709	100	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	1.23
710	100	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.95
711	100	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.96
712	48	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.36
713	48	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.3
714	48	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.31
715	75	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.78
716	75	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.63
717	75	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.64
718	100	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	1.2
719	100	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.95
720	100	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.94
721	48	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.38
722	48	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.31
723	48	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.3
724	75	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.81

725	75	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.63
726	75	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.65
727	100	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	1.22
728	100	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.99
729	100	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.94
730	25	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	0.41
731	25	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	0.31
732	25	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	0.29
733	25	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	0.41
734	25	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	0.32
735	25	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	0.29
736	25	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	0.41
737	25	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	0.31
738	25	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	0.31
739	25	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	0.33
740	25	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	0.23
741	25	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	0.21
742	25	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	0.32
743	25	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	0.22
744	25	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	0.21
745	25	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	0.32
746	25	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	0.21
747	25	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	0.21
748	25	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.32
749	25	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.19
750	25	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.17
751	25	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.28
752	25	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.18
753	25	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.17
754	25	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.29
755	25	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.15
756	25	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.17
757	48	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	1.31
758	48	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	1.01
759	48	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	0.92
760	75	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	1.72
761	75	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	1.34
762	75	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	1.23
763	100	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	2.01
764	100	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	1.55
765	100	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	1.42
766	48	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.28
767	48	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	1
768	48	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	0.9
769	75	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.69
770	75	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	1.33

771	75	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	1.22
772	100	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.99
773	100	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	1.54
774	100	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	1.41
775	48	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	1.27
776	48	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	0.992
777	48	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	0.9
778	75	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	1.68
779	75	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	1.32
780	75	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	1.22
781	100	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	1.99
782	100	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	1.54
783	100	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	1.42
784	48	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	1.18
785	48	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	0.9
786	48	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	0.79
787	75	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	1.57
788	75	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	1.23
789	75	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	1.11
790	100	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	1.85
791	100	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	1.44
792	100	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	1.31
793	48	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	1.15
794	48	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	0.9
795	48	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	0.78
796	75	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	1.53
797	75	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	1.22
798	75	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	1.1
799	100	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	1.82
800	100	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	1.43
801	100	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	1.29
802	48	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	1.12
803	48	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	0.87
804	48	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	0.77
805	75	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	1.5
806	75	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	1.19
807	75	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	1.09
808	100	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	1.8
809	100	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	1.41
810	100	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	1.29
811	48	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	0.96
812	48	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.59
813	48	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.48
814	75	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	1.32
815	75	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.95
816	75	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.84

817	100	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	1.58
818	100	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	1.16
819	100	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	1.04
820	48	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	0.862
821	48	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.56
822	48	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.46
823	75	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	1.26
824	75	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.93
825	75	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.84
826	100	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	1.52
827	100	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	1.15
828	100	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	1.04
829	48	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	0.83
830	48	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.56
831	48	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.45
832	75	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	1.21
833	75	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.91
834	75	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.83
835	100	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	1.48
836	100	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	1.13
837	100	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	1.03
838	25	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	0.77
839	25	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	0.51
840	25	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	0.44
841	25	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	0.73
842	25	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	0.51
843	25	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	0.43
844	25	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	0.72
845	25	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	0.5
846	25	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	0.43
847	25	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	0.64
848	25	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	0.44
849	25	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	0.38
850	25	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	0.61
851	25	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	0.42
852	25	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	0.35
853	25	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	0.58
854	25	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	0.39
855	25	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	0.35
856	25	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	0.41
857	25	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.28
858	25	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.24
859	25	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	0.38
860	25	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.26
861	25	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.24
862	25	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	0.35

863	25	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.27
864	25	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.23
865	48	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.33
866	48	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	1.11
867	48	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	1.02
868	75	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.64
869	75	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	1.36
870	75	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	1.25
871	100	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.88
872	100	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	1.53
873	100	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	1.41
874	48	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.31
875	48	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	1.1
876	48	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	1.02
877	75	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.62
878	75	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	1.35
879	75	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	1.25
880	100	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.87
881	100	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	1.52
882	100	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	1.4
883	48	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.29
884	48	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	1.1
885	48	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	1.01
886	75	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.61
887	75	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	1.35
888	75	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	1.24
889	100	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.86
890	100	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	1.52
891	100	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	1.4
892	48	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.25
893	48	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	1.02
894	48	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	0.93
895	75	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.55
896	75	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	1.26
897	75	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	1.17
898	100	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.77
899	100	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	1.43
900	100	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	1.32
901	48	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	1.12
902	48	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	1
903	48	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	0.92
904	75	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	1.51
905	75	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	1.25
906	75	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	1.16
907	100	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	1.73
908	100	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	1.42

909	100	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	1.31
910	48	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	1.198
911	48	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	0.99
912	48	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	0.92
913	75	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	1.49
914	75	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	1.24
915	75	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	1.15
916	100	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	1.73
917	100	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	1.41
918	100	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	1.31
919	48	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	1.18
920	48	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	0.86
921	48	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.72
922	75	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	1.46
923	75	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	1.11
924	75	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.98
925	100	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	1.66
926	100	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	1.26
927	100	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	1.13
928	48	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	1.06
929	48	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	0.78
930	48	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.67
931	75	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	1.31
932	75	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	1.05
933	75	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.95
934	100	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	1.5
935	100	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	1.22
936	100	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	1.102
937	48	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	1.02
938	48	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	0.76
939	48	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.67
940	75	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	1.28
941	75	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	1.03
942	75	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.94
943	100	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	1.47
944	100	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	1.195
945	100	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	1.095
946	25	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	0.95
947	25	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	0.74
948	25	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	0.63
949	25	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	0.94
950	25	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	0.7
951	25	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	0.63
952	25	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	0.92
953	25	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	0.7
954	25	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	0.62

955	25	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	0.9
956	25	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	0.64
957	25	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	0.55
958	25	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	0.85
959	25	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	0.57
960	25	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	0.5
961	25	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	0.84
962	25	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	0.57
963	25	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	0.5
964	25	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	0.79
965	25	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	0.43
966	25	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.35
967	25	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	0.66
968	25	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	0.38
969	25	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.32
970	25	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	0.58
971	25	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	0.34
972	25	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.31
973	48	2.5	500	150	3.8	2.04	1.505	1.93	37.5	3.86	1969	0.874
974	48	2.5	750	150	1.9	2.04	1.505	1.93	37.5	3.86	1969	0.731
975	48	2.5	900	150	1.4	2.04	1.505	1.93	37.5	3.86	1969	0.754
976	75	2.5	500	150	3.8	2.04	1.505	1.93	37.5	3.86	1969	1.47
977	75	2.5	750	150	1.9	2.04	1.505	1.93	37.5	3.86	1969	1.22
978	75	2.5	900	150	1.4	2.04	1.505	1.93	37.5	3.86	1969	1.18
979	100	2.5	500	150	3.8	2.04	1.505	1.93	37.5	3.86	1969	1.88
980	100	2.5	750	150	1.9	2.04	1.505	1.93	37.5	3.86	1969	1.52
981	100	2.5	900	150	1.4	2.04	1.505	1.93	37.5	3.86	1969	1.44
982	48	2.5	500	200	3.3	2.04	1.505	1.93	37.5	3.86	1969	0.86
983	48	2.5	750	200	1.6	2.04	1.505	1.93	37.5	3.86	1969	0.74
984	48	2.5	900	200	1.2	2.04	1.505	1.93	37.5	3.86	1969	0.78
985	75	2.5	500	200	3.3	2.04	1.505	1.93	37.5	3.86	1969	1.46
986	75	2.5	750	200	1.6	2.04	1.505	1.93	37.5	3.86	1969	1.22
987	75	2.5	900	200	1.2	2.04	1.505	1.93	37.5	3.86	1969	1.19
988	100	2.5	500	200	3.3	2.04	1.505	1.93	37.5	3.86	1969	1.89
989	100	2.5	750	200	1.6	2.04	1.505	1.93	37.5	3.86	1969	1.52
990	100	2.5	900	200	1.2	2.04	1.505	1.93	37.5	3.86	1969	1.44
991	48	2.5	500	250	2.9	2.04	1.505	1.93	37.5	3.86	1969	0.88
992	48	2.5	750	250	1.5	2.04	1.505	1.93	37.5	3.86	1969	0.72
993	48	2.5	900	250	1.1	2.04	1.505	1.93	37.5	3.86	1969	0.79
994	75	2.5	500	250	2.9	2.04	1.505	1.93	37.5	3.86	1969	1.47
995	75	2.5	750	250	1.5	2.04	1.505	1.93	37.5	3.86	1969	1.21
996	75	2.5	900	250	1.1	2.04	1.505	1.93	37.5	3.86	1969	1.2
997	100	2.5	500	250	2.9	2.04	1.505	1.93	37.5	3.86	1969	1.89
998	100	2.5	750	250	1.5	2.04	1.505	1.93	37.5	3.86	1969	1.51
999	100	2.5	900	250	1.1	2.04	1.505	1.93	37.5	3.86	1969	1.46
1000	48	3	500	150	3.8	2.04	1.505	1.93	45	3.86	1969	0.63

1001	48	3	750	150	1.9	2.04	1.505	1.93	45	3.86	1969	0.54
1002	48	3	900	150	1.4	2.04	1.505	1.93	45	3.86	1969	0.55
1003	75	3	500	150	3.8	2.04	1.505	1.93	45	3.86	1969	1.22
1004	75	3	750	150	1.9	2.04	1.505	1.93	45	3.86	1969	1
1005	75	3	900	150	1.4	2.04	1.505	1.93	45	3.86	1969	0.98
1006	100	3	500	150	3.8	2.04	1.505	1.93	45	3.86	1969	1.63
1007	100	3	750	150	1.9	2.04	1.505	1.93	45	3.86	1969	1.31
1008	100	3	900	150	1.4	2.04	1.505	1.93	45	3.86	1969	1.25
1009	48	3	500	200	3.3	2.04	1.505	1.93	45	3.86	1969	0.62
1010	48	3	750	200	1.6	2.04	1.505	1.93	45	3.86	1969	0.55
1011	48	3	900	200	1.2	2.04	1.505	1.93	45	3.86	1969	0.55
1012	75	3	500	200	3.3	2.04	1.505	1.93	45	3.86	1969	1.2
1013	75	3	750	200	1.6	2.04	1.505	1.93	45	3.86	1969	1.01
1014	75	3	900	200	1.2	2.04	1.505	1.93	45	3.86	1969	0.99
1015	100	3	500	200	3.3	2.04	1.505	1.93	45	3.86	1969	1.62
1016	100	3	750	200	1.6	2.04	1.505	1.93	45	3.86	1969	1.32
1017	100	3	900	200	1.2	2.04	1.505	1.93	45	3.86	1969	1.26
1018	48	3	500	250	2.9	2.04	1.505	1.93	45	3.86	1969	0.65
1019	48	3	750	250	1.5	2.04	1.505	1.93	45	3.86	1969	0.53
1020	48	3	900	250	1.1	2.04	1.505	1.93	45	3.86	1969	0.56
1021	75	3	500	250	2.9	2.04	1.505	1.93	45	3.86	1969	1.23
1022	75	3	750	250	1.5	2.04	1.505	1.93	45	3.86	1969	0.998
1023	75	3	900	250	1.1	2.04	1.505	1.93	45	3.86	1969	0.996
1024	100	3	500	250	2.9	2.04	1.505	1.93	45	3.86	1969	1.64
1025	100	3	750	250	1.5	2.04	1.505	1.93	45	3.86	1969	1.31
1026	100	3	900	250	1.1	2.04	1.505	1.93	45	3.86	1969	1.27
1027	48	4.5	500	150	3.8	2.04	1.505	1.93	67.5	3.86	1969	0.27
1028	48	4.5	750	150	1.9	2.04	1.505	1.93	67.5	3.86	1969	0.2
1029	48	4.5	900	150	1.4	2.04	1.505	1.93	67.5	3.86	1969	0.21
1030	75	4.5	500	150	3.8	2.04	1.505	1.93	67.5	3.86	1969	0.67
1031	75	4.5	750	150	1.9	2.04	1.505	1.93	67.5	3.86	1969	0.54
1032	75	4.5	900	150	1.4	2.04	1.505	1.93	67.5	3.86	1969	0.54
1033	100	4.5	500	150	3.8	2.04	1.505	1.93	67.5	3.86	1969	1.06
1034	100	4.5	750	150	1.9	2.04	1.505	1.93	67.5	3.86	1969	0.83
1035	100	4.5	900	150	1.4	2.04	1.505	1.93	67.5	3.86	1969	0.85
1036	48	4.5	500	200	3.3	2.04	1.505	1.93	67.5	3.86	1969	0.23
1037	48	4.5	750	200	1.6	2.04	1.505	1.93	67.5	3.86	1969	0.2
1038	48	4.5	900	200	1.2	2.04	1.505	1.93	67.5	3.86	1969	0.23
1039	75	4.5	500	200	3.3	2.04	1.505	1.93	67.5	3.86	1969	0.66
1040	75	4.5	750	200	1.6	2.04	1.505	1.93	67.5	3.86	1969	0.52
1041	75	4.5	900	200	1.2	2.04	1.505	1.93	67.5	3.86	1969	0.54
1042	100	4.5	500	200	3.3	2.04	1.505	1.93	67.5	3.86	1969	1.04
1043	100	4.5	750	200	1.6	2.04	1.505	1.93	67.5	3.86	1969	0.83
1044	100	4.5	900	200	1.2	2.04	1.505	1.93	67.5	3.86	1969	0.83
1045	48	4.5	500	250	2.9	2.04	1.505	1.93	67.5	3.86	1969	0.26
1046	48	4.5	750	250	1.5	2.04	1.505	1.93	67.5	3.86	1969	0.21

1047	48	4.5	900	250	1.1	2.04	1.505	1.93	67.5	3.86	1969	0.21
1048	75	4.5	500	250	2.9	2.04	1.505	1.93	67.5	3.86	1969	0.69
1049	75	4.5	750	250	1.5	2.04	1.505	1.93	67.5	3.86	1969	0.53
1050	75	4.5	900	250	1.1	2.04	1.505	1.93	67.5	3.86	1969	0.56
1051	100	4.5	500	250	2.9	2.04	1.505	1.93	67.5	3.86	1969	1.06
1052	100	4.5	750	250	1.5	2.04	1.505	1.93	67.5	3.86	1969	0.87
1053	100	4.5	900	250	1.1	2.04	1.505	1.93	67.5	3.86	1969	0.84
1054	25	2.5	500	150	3.8	2.04	1.505	1.93	37.5	3.86	1969	0.33
1055	25	2.5	750	150	1.9	2.04	1.505	1.93	37.5	3.86	1969	0.22
1056	25	2.5	900	150	1.4	2.04	1.505	1.93	37.5	3.86	1969	0.22
1057	25	2.5	500	200	3.3	2.04	1.505	1.93	37.5	3.86	1969	0.32
1058	25	2.5	750	200	1.6	2.04	1.505	1.93	37.5	3.86	1969	0.22
1059	25	2.5	900	200	1.2	2.04	1.505	1.93	37.5	3.86	1969	0.21
1060	25	2.5	500	250	2.9	2.04	1.505	1.93	37.5	3.86	1969	0.32
1061	25	2.5	750	250	1.5	2.04	1.505	1.93	37.5	3.86	1969	0.21
1062	25	2.5	900	250	1.1	2.04	1.505	1.93	37.5	3.86	1969	0.22
1063	25	3	500	150	3.8	2.04	1.505	1.93	45	3.86	1969	0.24
1064	25	3	750	150	1.9	2.04	1.505	1.93	45	3.86	1969	0.14
1065	25	3	900	150	1.4	2.04	1.505	1.93	45	3.86	1969	0.13
1066	25	3	500	200	3.3	2.04	1.505	1.93	45	3.86	1969	0.24
1067	25	3	750	200	1.6	2.04	1.505	1.93	45	3.86	1969	0.14
1068	25	3	900	200	1.2	2.04	1.505	1.93	45	3.86	1969	0.13
1069	25	3	500	250	2.9	2.04	1.505	1.93	45	3.86	1969	0.23
1070	25	3	750	250	1.5	2.04	1.505	1.93	45	3.86	1969	0.12
1071	25	3	900	250	1.1	2.04	1.505	1.93	45	3.86	1969	0.13
1072	25	4.5	500	150	3.8	2.04	1.505	1.93	67.5	3.86	1969	0.13
1073	25	4.5	750	150	1.9	2.04	1.505	1.93	67.5	3.86	1969	0.07
1074	25	4.5	900	150	1.4	2.04	1.505	1.93	67.5	3.86	1969	0.07
1075	25	4.5	500	200	3.3	2.04	1.505	1.93	67.5	3.86	1969	0.116
1076	25	4.5	750	200	1.6	2.04	1.505	1.93	67.5	3.86	1969	0.066
1077	25	4.5	900	200	1.2	2.04	1.505	1.93	67.5	3.86	1969	0.065
1078	25	4.5	500	250	2.9	2.04	1.505	1.93	67.5	3.86	1969	0.12
1079	25	4.5	750	250	1.5	2.04	1.505	1.93	67.5	3.86	1969	0.063
1080	25	4.5	900	250	1.1	2.04	1.505	1.93	67.5	3.86	1969	0.066
1081	48	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	1.2
1082	48	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	0.94
1083	48	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	0.86
1084	75	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	1.56
1085	75	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	1.24
1086	75	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	1.14
1087	100	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	1.81
1088	100	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	1.43
1089	100	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	1.32
1090	48	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	1.18
1091	48	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	0.94
1092	48	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	0.845

1093	75	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	1.53
1094	75	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	1.23
1095	75	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	1.13
1096	100	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	1.79
1097	100	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	1.42
1098	100	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	1.31
1099	48	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	1.17
1100	48	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	0.92
1101	48	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	0.84
1102	75	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	1.53
1103	75	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	1.22
1104	75	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	1.14
1105	100	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	1.79
1106	100	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	1.42
1107	100	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	1.32
1108	48	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	1.08
1109	48	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	0.84
1110	48	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	0.74
1111	75	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	1.42
1112	75	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	1.14
1113	75	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	1.03
1114	100	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	1.67
1115	100	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	1.33
1116	100	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	1.22
1117	48	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	1.06
1118	48	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	0.83
1119	48	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	0.73
1120	75	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	1.39
1121	75	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	1.13
1122	75	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	1.02
1123	100	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	1.64
1124	100	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	1.31
1125	100	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	1.2
1126	48	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	1.03
1127	48	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	0.81
1128	48	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	0.72
1129	75	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	1.37
1130	75	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	1.1
1131	75	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	1.02
1132	100	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	1.62
1133	100	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	1.3
1134	100	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	1.2
1135	48	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	0.88
1136	48	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.54
1137	48	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.44
1138	75	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	1.21

1139	75	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.88
1140	75	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.78
1141	100	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	1.43
1142	100	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	1.07
1143	100	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.96
1144	48	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	0.792
1145	48	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.51
1146	48	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.41
1147	75	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	1.15
1148	75	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.86
1149	75	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.78
1150	100	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	1.38
1151	100	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	1.06
1152	100	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.96
1153	48	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	0.76
1154	48	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.51
1155	48	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.41
1156	75	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	1.1
1157	75	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.84
1158	75	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.77
1159	100	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	1.34
1160	100	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	1.05
1161	100	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.96
1162	25	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	0.71
1163	25	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	0.47
1164	25	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	0.41
1165	25	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	0.68
1166	25	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	0.47
1167	25	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	0.39
1168	25	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	0.66
1169	25	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	0.46
1170	25	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	0.4
1171	25	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	0.59
1172	25	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	0.4
1173	25	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	0.35
1174	25	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	0.55
1175	25	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	0.38
1176	25	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	0.31
1177	25	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	0.52
1178	25	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	0.34
1179	25	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	0.31
1180	25	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	0.36
1181	25	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.23
1182	25	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.19
1183	25	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	0.34
1184	25	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.21

1185	25	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.2
1186	25	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	0.3
1187	25	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.21
1188	25	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.18
1189	48	2.5	500	150	35.1	2.04	6.685	6.50	37.5	13	2345	1.23
1190	48	2.5	750	150	17.7	2.04	6.685	6.50	37.5	13	2345	1.04
1191	48	2.5	900	150	13.0	2.04	6.685	6.50	37.5	13	2345	0.97
1192	75	2.5	500	150	35.1	2.04	6.685	6.50	37.5	13	2345	1.5
1193	75	2.5	750	150	17.7	2.04	6.685	6.50	37.5	13	2345	1.27
1194	75	2.5	900	150	13.0	2.04	6.685	6.50	37.5	13	2345	1.18
1195	100	2.5	500	150	35.1	2.04	6.685	6.50	37.5	13	2345	1.7
1196	100	2.5	750	150	17.7	2.04	6.685	6.50	37.5	13	2345	1.41
1197	100	2.5	900	150	13.0	2.04	6.685	6.50	37.5	13	2345	1.31
1198	48	2.5	500	200	30.4	2.04	6.685	6.50	37.5	13	2345	1.21
1199	48	2.5	750	200	15.3	2.04	6.685	6.50	37.5	13	2345	1.03
1200	48	2.5	900	200	11.3	2.04	6.685	6.50	37.5	13	2345	0.96
1201	75	2.5	500	200	30.4	2.04	6.685	6.50	37.5	13	2345	1.48
1202	75	2.5	750	200	15.3	2.04	6.685	6.50	37.5	13	2345	1.26
1203	75	2.5	900	200	11.3	2.04	6.685	6.50	37.5	13	2345	1.17
1204	100	2.5	500	200	30.4	2.04	6.685	6.50	37.5	13	2345	1.69
1205	100	2.5	750	200	15.3	2.04	6.685	6.50	37.5	13	2345	1.41
1206	100	2.5	900	200	11.3	2.04	6.685	6.50	37.5	13	2345	1.31
1207	48	2.5	500	250	27.2	2.04	6.685	6.50	37.5	13	2345	1.19
1208	48	2.5	750	250	13.7	2.04	6.685	6.50	37.5	13	2345	1.03
1209	48	2.5	900	250	10.1	2.04	6.685	6.50	37.5	13	2345	0.95
1210	75	2.5	500	250	27.2	2.04	6.685	6.50	37.5	13	2345	1.47
1211	75	2.5	750	250	13.7	2.04	6.685	6.50	37.5	13	2345	1.25
1212	75	2.5	900	250	10.1	2.04	6.685	6.50	37.5	13	2345	1.16
1213	100	2.5	500	250	27.2	2.04	6.685	6.50	37.5	13	2345	1.69
1214	100	2.5	750	250	13.7	2.04	6.685	6.50	37.5	13	2345	1.41
1215	100	2.5	900	250	10.1	2.04	6.685	6.50	37.5	13	2345	1.31
1216	48	3	500	150	35.1	2.04	6.685	6.50	45	13	2345	1.16
1217	48	3	750	150	17.7	2.04	6.685	6.50	45	13	2345	0.96
1218	48	3	900	150	13.0	2.04	6.685	6.50	45	13	2345	0.88
1219	75	3	500	150	35.1	2.04	6.685	6.50	45	13	2345	1.42
1220	75	3	750	150	17.7	2.04	6.685	6.50	45	13	2345	1.18
1221	75	3	900	150	13.0	2.04	6.685	6.50	45	13	2345	1.1
1222	100	3	500	150	35.1	2.04	6.685	6.50	45	13	2345	1.61
1223	100	3	750	150	17.7	2.04	6.685	6.50	45	13	2345	1.32
1224	100	3	900	150	13.0	2.04	6.685	6.50	45	13	2345	1.23
1225	48	3	500	200	30.4	2.04	6.685	6.50	45	13	2345	1.12
1226	48	3	750	200	15.3	2.04	6.685	6.50	45	13	2345	0.95
1227	48	3	900	200	11.3	2.04	6.685	6.50	45	13	2345	0.87
1228	75	3	500	200	30.4	2.04	6.685	6.50	45	13	2345	1.38
1229	75	3	750	200	15.3	2.04	6.685	6.50	45	13	2345	1.17
1230	75	3	900	200	11.3	2.04	6.685	6.50	45	13	2345	1.09

1231	100	3	500	200	30.4	2.04	6.685	6.50	45	13	2345	1.58
1232	100	3	750	200	15.3	2.04	6.685	6.50	45	13	2345	1.31
1233	100	3	900	200	11.3	2.04	6.685	6.50	45	13	2345	1.22
1234	48	3	500	250	27.2	2.04	6.685	6.50	45	13	2345	1.11
1235	48	3	750	250	13.7	2.04	6.685	6.50	45	13	2345	0.93
1236	48	3	900	250	10.1	2.04	6.685	6.50	45	13	2345	0.87
1237	75	3	500	250	27.2	2.04	6.685	6.50	45	13	2345	1.37
1238	75	3	750	250	13.7	2.04	6.685	6.50	45	13	2345	1.16
1239	75	3	900	250	10.1	2.04	6.685	6.50	45	13	2345	1.08
1240	100	3	500	250	27.2	2.04	6.685	6.50	45	13	2345	1.57
1241	100	3	750	250	13.7	2.04	6.685	6.50	45	13	2345	1.31
1242	100	3	900	250	10.1	2.04	6.685	6.50	45	13	2345	1.22
1243	48	4.5	500	150	35.1	2.04	6.685	6.50	67.5	13	2345	1.1
1244	48	4.5	750	150	17.7	2.04	6.685	6.50	67.5	13	2345	0.81
1245	48	4.5	900	150	13.0	2.04	6.685	6.50	67.5	13	2345	0.68
1246	75	4.5	500	150	35.1	2.04	6.685	6.50	67.5	13	2345	1.34
1247	75	4.5	750	150	17.7	2.04	6.685	6.50	67.5	13	2345	1.04
1248	75	4.5	900	150	13.0	2.04	6.685	6.50	67.5	13	2345	0.92
1249	100	4.5	500	150	35.1	2.04	6.685	6.50	67.5	13	2345	1.51
1250	100	4.5	750	150	17.7	2.04	6.685	6.50	67.5	13	2345	1.17
1251	100	4.5	900	150	13.0	2.04	6.685	6.50	67.5	13	2345	1.06
1252	48	4.5	500	200	30.4	2.04	6.685	6.50	67.5	13	2345	0.99
1253	48	4.5	750	200	15.3	2.04	6.685	6.50	67.5	13	2345	0.73
1254	48	4.5	900	200	11.3	2.04	6.685	6.50	67.5	13	2345	0.64
1255	75	4.5	500	200	30.4	2.04	6.685	6.50	67.5	13	2345	1.21
1256	75	4.5	750	200	15.3	2.04	6.685	6.50	67.5	13	2345	0.98
1257	75	4.5	900	200	11.3	2.04	6.685	6.50	67.5	13	2345	0.89
1258	100	4.5	500	200	30.4	2.04	6.685	6.50	67.5	13	2345	1.38
1259	100	4.5	750	200	15.3	2.04	6.685	6.50	67.5	13	2345	1.13
1260	100	4.5	900	200	11.3	2.04	6.685	6.50	67.5	13	2345	1.03
1261	48	4.5	500	250	27.2	2.04	6.685	6.50	67.5	13	2345	0.96
1262	48	4.5	750	250	13.7	2.04	6.685	6.50	67.5	13	2345	0.71
1263	48	4.5	900	250	10.1	2.04	6.685	6.50	67.5	13	2345	0.63
1264	75	4.5	500	250	27.2	2.04	6.685	6.50	67.5	13	2345	1.18
1265	75	4.5	750	250	13.7	2.04	6.685	6.50	67.5	13	2345	0.97
1266	75	4.5	900	250	10.1	2.04	6.685	6.50	67.5	13	2345	0.89
1267	100	4.5	500	250	27.2	2.04	6.685	6.50	67.5	13	2345	1.35
1268	100	4.5	750	250	13.7	2.04	6.685	6.50	67.5	13	2345	1.115
1269	100	4.5	900	250	10.1	2.04	6.685	6.50	67.5	13	2345	1.028
1270	25	2.5	500	150	35.1	2.04	6.685	6.50	37.5	13	2345	0.9
1271	25	2.5	750	150	17.7	2.04	6.685	6.50	37.5	13	2345	0.71
1272	25	2.5	900	150	13.0	2.04	6.685	6.50	37.5	13	2345	0.6
1273	25	2.5	500	200	30.4	2.04	6.685	6.50	37.5	13	2345	0.88
1274	25	2.5	750	200	15.3	2.04	6.685	6.50	37.5	13	2345	0.66
1275	25	2.5	900	200	11.3	2.04	6.685	6.50	37.5	13	2345	0.6
1276	25	2.5	500	250	27.2	2.04	6.685	6.50	37.5	13	2345	0.87

1277	25	2.5	750	250	13.7	2.04	6.685	6.50	37.5	13	2345	0.66
1278	25	2.5	900	250	10.1	2.04	6.685	6.50	37.5	13	2345	0.59
1279	25	3	500	150	35.1	2.04	6.685	6.50	45	13	2345	0.85
1280	25	3	750	150	17.7	2.04	6.685	6.50	45	13	2345	0.6
1281	25	3	900	150	13.0	2.04	6.685	6.50	45	13	2345	0.52
1282	25	3	500	200	30.4	2.04	6.685	6.50	45	13	2345	0.81
1283	25	3	750	200	15.3	2.04	6.685	6.50	45	13	2345	0.54
1284	25	3	900	200	11.3	2.04	6.685	6.50	45	13	2345	0.47
1285	25	3	500	250	27.2	2.04	6.685	6.50	45	13	2345	0.8
1286	25	3	750	250	13.7	2.04	6.685	6.50	45	13	2345	0.54
1287	25	3	900	250	10.1	2.04	6.685	6.50	45	13	2345	0.47
1288	25	4.5	500	150	35.1	2.04	6.685	6.50	67.5	13	2345	0.74
1289	25	4.5	750	150	17.7	2.04	6.685	6.50	67.5	13	2345	0.4
1290	25	4.5	900	150	13.0	2.04	6.685	6.50	67.5	13	2345	0.32
1291	25	4.5	500	200	30.4	2.04	6.685	6.50	67.5	13	2345	0.62
1292	25	4.5	750	200	15.3	2.04	6.685	6.50	67.5	13	2345	0.34
1293	25	4.5	900	200	11.3	2.04	6.685	6.50	67.5	13	2345	0.29
1294	25	4.5	500	250	27.2	2.04	6.685	6.50	67.5	13	2345	0.54
1295	25	4.5	750	250	13.7	2.04	6.685	6.50	67.5	13	2345	0.31
1296	25	4.5	900	250	10.1	2.04	6.685	6.50	67.5	13	2345	0.28

Table AVI.2 Parametric modelling results of the plain-strain models for determining the factor of safety of the double row chain pillar

Experiment no.	[1] w (m)	[2] h (m)	[3] H (m)	[4] Fl (m)	[5] β (°)	[6] σ_C (MPa)	[7] $\frac{E_R}{E_C}$	[8] $\frac{E_F}{E_C}$	[9] H_C (m)	[10] E_{OB} (GPa)	[11] ρ_{OB} (kg/m3)	[12] Fo S
1	10	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	0.099
2	10	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	0.24
3	10	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	0.3
4	21.5	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	0.67
5	21.5	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	0.81
6	21.5	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	0.97
7	35	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	1.48
8	35	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	1.71
9	35	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	2.03
10	47.5	2.5	350	150	7.0	2.04	1.51	1.93	37.5	3.86	1969	2.14
11	47.5	2.5	350	150	7.0	3.87	1.51	1.93	37.5	3.86	1969	2.48
12	47.5	2.5	350	150	7.0	6.32	1.51	1.93	37.5	3.86	1969	2.94
13	10	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	0.11
14	10	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	0.27
15	10	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	0.35
16	21.5	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	0.66
17	21.5	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	0.78
18	21.5	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	0.95
19	35	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	1.45
20	35	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	1.67
21	35	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	1.98
22	47.5	2.5	350	200	6.1	2.04	1.51	1.93	37.5	3.86	1969	2.1
23	47.5	2.5	350	200	6.1	3.87	1.51	1.93	37.5	3.86	1969	2.43
24	47.5	2.5	350	200	6.1	6.32	1.51	1.93	37.5	3.86	1969	2.88
25	10	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	0.11
26	10	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	0.27
27	10	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	0.35
28	21.5	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	0.63
29	21.5	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	0.76

30	21.5	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	0.92
31	35	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	1.42
32	35	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	1.64
33	35	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	1.94
34	47.5	2.5	350	250	5.5	2.04	1.51	1.93	37.5	3.86	1969	2.07
35	47.5	2.5	350	250	5.5	3.87	1.51	1.93	37.5	3.86	1969	2.39
36	47.5	2.5	350	250	5.5	6.32	1.51	1.93	37.5	3.86	1969	2.84
37	10	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	0.1
38	10	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	0.27
39	10	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	0.32
40	21.5	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	0.43
41	21.5	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	0.54
42	21.5	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	0.68
43	35	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	1.13
44	35	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	1.33
45	35	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	1.59
46	47.5	3	350	150	7.0	2.04	1.51	1.93	45	3.86	1969	1.74
47	47.5	3	350	150	7.0	3.87	1.51	1.93	45	3.86	1969	2.03
48	47.5	3	350	150	7.0	6.32	1.51	1.93	45	3.86	1969	2.41
49	10	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	0.098
50	10	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	0.25
51	10	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	0.32
52	21.5	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	0.4
53	21.5	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	0.52
54	21.5	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	0.65
55	35	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	1.08
56	35	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	1.26
57	35	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	1.51
58	47.5	3	350	200	6.1	2.04	1.51	1.93	45	3.86	1969	1.7
59	47.5	3	350	200	6.1	3.87	1.51	1.93	45	3.86	1969	1.97
60	47.5	3	350	200	6.1	6.32	1.51	1.93	45	3.86	1969	2.34
61	10	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	0.098
62	10	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	0.23
63	10	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	0.36
64	21.5	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	0.41

65	21.5	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	0.51
66	21.5	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	0.66
67	35	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	1.05
68	35	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	1.23
69	35	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	1.48
70	47.5	3	350	250	5.5	2.04	1.51	1.93	45	3.86	1969	1.65
71	47.5	3	350	250	5.5	3.87	1.51	1.93	45	3.86	1969	1.92
72	47.5	3	350	250	5.5	6.32	1.51	1.93	45	3.86	1969	2.29
73	10	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	0.13
74	10	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	0.27
75	10	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	0.41
76	21.5	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	0.16
77	21.5	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	0.29
78	21.5	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	0.4
79	35	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	0.62
80	35	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	0.77
81	35	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	0.95
82	47.5	4.5	350	150	7.0	2.04	1.51	1.93	67.5	3.86	1969	1.11
83	47.5	4.5	350	150	7.0	3.87	1.51	1.93	67.5	3.86	1969	1.32
84	47.5	4.5	350	150	7.0	6.32	1.51	1.93	67.5	3.86	1969	1.6
85	10	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.14
86	10	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	0.3
87	10	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	0.41
88	21.5	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.15
89	21.5	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	0.3
90	21.5	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	0.39
91	35	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	0.59
92	35	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	0.72
93	35	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	0.9
94	47.5	4.5	350	200	6.1	2.04	1.51	1.93	67.5	3.86	1969	1.06
95	47.5	4.5	350	200	6.1	3.87	1.51	1.93	67.5	3.86	1969	1.26
96	47.5	4.5	350	200	6.1	6.32	1.51	1.93	67.5	3.86	1969	1.52
97	10	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.18
98	10	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	0.33
99	10	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	0.46

100	21.5	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.15
101	21.5	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	0.29
102	21.5	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	0.4
103	35	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	0.52
104	35	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	0.65
105	35	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	0.82
106	47.5	4.5	350	250	5.5	2.04	1.51	1.93	67.5	3.86	1969	1
107	47.5	4.5	350	250	5.5	3.87	1.51	1.93	67.5	3.86	1969	1.19
108	47.5	4.5	350	250	5.5	6.32	1.51	1.93	67.5	3.86	1969	1.45
109	10	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	0.55
110	10	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	0.6
111	10	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	0.66
112	21.5	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	1.22
113	21.5	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	1.34
114	21.5	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	1.52
115	35	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	1.67
116	35	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	1.87
117	35	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	2.15
118	47.5	2.5	350	150	38.0	2.04	4.25	4.47	37.5	8.93	2229	2.06
119	47.5	2.5	350	150	38.0	3.87	4.25	4.47	37.5	8.93	2229	2.33
120	47.5	2.5	350	150	38.0	6.32	4.25	4.47	37.5	8.93	2229	2.71
121	10	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	0.51
122	10	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	0.55
123	10	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	0.62
124	21.5	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	1.17
125	21.5	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	1.3
126	21.5	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	1.46
127	35	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	1.62
128	35	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	1.81
129	35	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	2.08
130	47.5	2.5	350	200	32.9	2.04	4.25	4.47	37.5	8.93	2229	2.01
131	47.5	2.5	350	200	32.9	3.87	4.25	4.47	37.5	8.93	2229	2.27
132	47.5	2.5	350	200	32.9	6.32	4.25	4.47	37.5	8.93	2229	2.63
133	10	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	0.48
134	10	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	0.53

135	10	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	0.59
136	21.5	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	1.16
137	21.5	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	1.28
138	21.5	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	1.44
139	35	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	1.6
140	35	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	1.8
141	35	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	2.06
142	47.5	2.5	350	250	29.4	2.04	4.25	4.47	37.5	8.93	2229	1.99
143	47.5	2.5	350	250	29.4	3.87	4.25	4.47	37.5	8.93	2229	2.26
144	47.5	2.5	350	250	29.4	6.32	4.25	4.47	37.5	8.93	2229	2.62
145	10	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	0.44
146	10	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	0.48
147	10	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	0.54
148	21.5	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	1.09
149	21.5	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	1.21
150	21.5	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	1.36
151	35	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	1.52
152	35	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	1.7
153	35	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	1.94
154	47.5	3	350	150	38.0	2.04	4.25	4.47	45	8.93	2229	1.88
155	47.5	3	350	150	38.0	3.87	4.25	4.47	45	8.93	2229	2.12
156	47.5	3	350	150	38.0	6.32	4.25	4.47	45	8.93	2229	2.46
157	10	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	0.39
158	10	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	0.43
159	10	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	0.49
160	21.5	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	1.05
161	21.5	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	1.15
162	21.5	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	1.3
163	35	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	1.46
164	35	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	1.63
165	35	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	1.87
166	47.5	3	350	200	32.9	2.04	4.25	4.47	45	8.93	2229	1.82
167	47.5	3	350	200	32.9	3.87	4.25	4.47	45	8.93	2229	2.06
168	47.5	3	350	200	32.9	6.32	4.25	4.47	45	8.93	2229	2.38
169	10	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	0.33

170	10	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	0.37
171	10	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	0.43
172	21.5	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	1.04
173	21.5	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	1.14
174	21.5	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	1.29
175	35	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	1.46
176	35	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	1.63
177	35	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	1.87
178	47.5	3	350	250	29.4	2.04	4.25	4.47	45	8.93	2229	1.81
179	47.5	3	350	250	29.4	3.87	4.25	4.47	45	8.93	2229	2.04
180	47.5	3	350	250	29.4	6.32	4.25	4.47	45	8.93	2229	2.36
181	10	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	0.29
182	10	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	0.34
183	10	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	0.39
184	21.5	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	0.9
185	21.5	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	1
186	21.5	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	1.14
187	35	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	1.32
188	35	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	1.49
189	35	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	1.71
190	47.5	4.5	350	150	38.0	2.04	4.25	4.47	67.5	8.93	2229	1.65
191	47.5	4.5	350	150	38.0	3.87	4.25	4.47	67.5	8.93	2229	1.87
192	47.5	4.5	350	150	38.0	6.32	4.25	4.47	67.5	8.93	2229	2.16
193	10	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	0.223
194	10	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	0.258
195	10	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	0.304
196	21.5	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	0.78
197	21.5	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	0.87
198	21.5	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	0.98
199	35	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	1.18
200	35	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	1.31
201	35	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	1.49
202	47.5	4.5	350	200	32.9	2.04	4.25	4.47	67.5	8.93	2229	1.48
203	47.5	4.5	350	200	32.9	3.87	4.25	4.47	67.5	8.93	2229	1.66
204	47.5	4.5	350	200	32.9	6.32	4.25	4.47	67.5	8.93	2229	1.91

205	10	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	0.19
206	10	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	0.22
207	10	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	0.27
208	21.5	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	0.74
209	21.5	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	0.82
210	21.5	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	0.93
211	35	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	1.14
212	35	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	1.27
213	35	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	1.44
214	47.5	4.5	350	250	29.4	2.04	4.25	4.47	67.5	8.93	2229	1.45
215	47.5	4.5	350	250	29.4	3.87	4.25	4.47	67.5	8.93	2229	1.63
216	47.5	4.5	350	250	29.4	6.32	4.25	4.47	67.5	8.93	2229	1.87
217	10	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	0.63
218	10	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	0.69
219	10	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	0.76
220	21.5	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	1.26
221	21.5	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	1.39
222	21.5	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	1.57
223	35	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	1.77
224	35	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	1.99
225	35	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	2.29
226	47.5	2.5	350	150	65.8	2.04	6.69	6.50	37.5	13	2345	2.11
227	47.5	2.5	350	150	65.8	3.87	6.69	6.50	37.5	13	2345	2.4
228	47.5	2.5	350	150	65.8	6.32	6.69	6.50	37.5	13	2345	2.79
229	10	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	0.63
230	10	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	0.69
231	10	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	0.78
232	21.5	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.29
233	21.5	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	1.44
234	21.5	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	1.64
235	35	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.56
236	35	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	1.74
237	35	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	1.99
238	47.5	2.5	350	200	57.0	2.04	6.69	6.50	37.5	13	2345	1.91
239	47.5	2.5	350	200	57.0	3.87	6.69	6.50	37.5	13	2345	2.15

240	47.5	2.5	350	200	57.0	6.32	6.69	6.50	37.5	13	2345	2.48
241	10	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	0.6
242	10	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	0.64
243	10	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	0.7
244	21.5	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1.15
245	21.5	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	1.26
246	21.5	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	1.41
247	35	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1.53
248	35	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	1.7
249	35	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	1.94
250	47.5	2.5	350	250	51.0	2.04	6.69	6.50	37.5	13	2345	1.87
251	47.5	2.5	350	250	51.0	3.87	6.69	6.50	37.5	13	2345	2.11
252	47.5	2.5	350	250	51.0	6.32	6.69	6.50	37.5	13	2345	2.43
253	10	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	0.54
254	10	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	0.59
255	10	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	0.66
256	21.5	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.18
257	21.5	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	1.3
258	21.5	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	1.47
259	35	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.6
260	35	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	1.79
261	35	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	2.05
262	47.5	3	350	150	65.8	2.04	6.69	6.50	45	13	2345	1.96
263	47.5	3	350	150	65.8	3.87	6.69	6.50	45	13	2345	2.21
264	47.5	3	350	150	65.8	6.32	6.69	6.50	45	13	2345	2.57
265	10	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	0.51
266	10	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	0.55
267	10	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	0.61
268	21.5	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	1.09
269	21.5	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	1.19
270	21.5	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	1.33
271	35	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	1.46
272	35	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	1.62
273	35	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	1.84
274	47.5	3	350	200	57.0	2.04	6.69	6.50	45	13	2345	1.78

275	47.5	3	350	200	57.0	3.87	6.69	6.50	45	13	2345	2
276	47.5	3	350	200	57.0	6.32	6.69	6.50	45	13	2345	2.3
277	10	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	0.49
278	10	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	0.53
279	10	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	0.58
280	21.5	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.05
281	21.5	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	1.15
282	21.5	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	1.28
283	35	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.41
284	35	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	1.57
285	35	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	1.78
286	47.5	3	350	250	51.0	2.04	6.69	6.50	45	13	2345	1.72
287	47.5	3	350	250	51.0	3.87	6.69	6.50	45	13	2345	1.93
288	47.5	3	350	250	51.0	6.32	6.69	6.50	45	13	2345	2.21
289	10	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	0.37
290	10	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	0.41
291	10	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	0.48
292	21.5	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	0.98
293	21.5	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	1.09
294	21.5	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	1.25
295	35	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	1.4
296	35	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	1.57
297	35	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	1.8
298	47.5	4.5	350	150	65.8	2.04	6.69	6.50	67.5	13	2345	1.73
299	47.5	4.5	350	150	65.8	3.87	6.69	6.50	67.5	13	2345	1.95
300	47.5	4.5	350	150	65.8	6.32	6.69	6.50	67.5	13	2345	2.27
301	10	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	0.35
302	10	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	0.39
303	10	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	0.44
304	21.5	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	0.91
305	21.5	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	1
306	21.5	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	1.13
307	35	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	1.27
308	35	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	1.41
309	35	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	1.61

310	47.5	4.5	350	200	57.0	2.04	6.69	6.50	67.5	13	2345	1.55
311	47.5	4.5	350	200	57.0	3.87	6.69	6.50	67.5	13	2345	1.74
312	47.5	4.5	350	200	57.0	6.32	6.69	6.50	67.5	13	2345	2
313	10	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	0.32
314	10	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	0.35
315	10	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	0.4
316	21.5	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	0.86
317	21.5	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	0.64
318	21.5	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	1.04
319	35	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	1.18
320	35	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	1.31
321	35	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	1.47
322	47.5	4.5	350	250	51.0	2.04	6.69	6.50	67.5	13	2345	1.44
323	47.5	4.5	350	250	51.0	3.87	6.69	6.50	67.5	13	2345	1.6
324	47.5	4.5	350	250	51.0	6.32	6.69	6.50	67.5	13	2345	1.83
325	21.5	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	0.69
326	21.5	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	0.6
327	21.5	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	0.6
328	35	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	1.47
329	35	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	1.19
330	35	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	1.13
331	47.5	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	2.08
332	47.5	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	1.62
333	47.5	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	1.5
334	21.5	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	0.67
335	21.5	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	0.59
336	21.5	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	0.6
337	35	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	1.46
338	35	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	1.19
339	35	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	1.13
340	47.5	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	2.07
341	47.5	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	1.61
342	47.5	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	1.51
343	21.5	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	0.69
344	21.5	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	0.57

345	21.5	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	0.6
346	35	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	1.46
347	35	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	1.15
348	35	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	1.14
349	47.5	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	2.07
350	47.5	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	1.59
351	47.5	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	1.52
352	21.5	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	0.49
353	21.5	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	0.4
354	21.5	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	0.41
355	35	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	1.14
356	35	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	0.91
357	35	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	0.9
358	47.5	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	1.74
359	47.5	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	1.36
360	47.5	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	1.29
361	21.5	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	0.46
362	21.5	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	0.41
363	21.5	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	0.42
364	35	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	1.11
365	35	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	0.91
366	35	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	0.9
367	47.5	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	1.7
368	47.5	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	1.35
369	47.5	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	1.28
370	21.5	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	0.49
371	21.5	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	0.39
372	21.5	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	0.41
373	35	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	1.13
374	35	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	0.9
375	35	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	0.9
376	47.5	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	1.73
377	47.5	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	1.34
378	47.5	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	1.29
379	21.5	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.36

380	21.5	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.3
381	21.5	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.28
382	35	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.61
383	35	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.47
384	35	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.47
385	47.5	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	1.07
386	47.5	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.82
387	47.5	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.82
388	21.5	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.34
389	21.5	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.29
390	21.5	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.27
391	35	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.59
392	35	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.43
393	35	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.47
394	47.5	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	1.02
395	47.5	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.81
396	47.5	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.8
397	21.5	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.34
398	21.5	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.31
399	21.5	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.28
400	35	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.59
401	35	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.43
402	35	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.47
403	47.5	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	1.02
404	47.5	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.82
405	47.5	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.8
406	10	2.5	500	150	3.8	6.32	1.51	1.93	37.5	3.86	1969	0.29
407	10	2.5	750	150	1.9	6.32	1.51	1.93	37.5	3.86	1969	0.26
408	10	2.5	900	150	1.4	6.32	1.51	1.93	37.5	3.86	1969	0.29
409	10	2.5	500	200	3.3	6.32	1.51	1.93	37.5	3.86	1969	0.28
410	10	2.5	750	200	1.6	6.32	1.51	1.93	37.5	3.86	1969	0.27
411	10	2.5	900	200	1.2	6.32	1.51	1.93	37.5	3.86	1969	0.26
412	10	2.5	500	250	2.9	6.32	1.51	1.93	37.5	3.86	1969	0.26
413	10	2.5	750	250	1.5	6.32	1.51	1.93	37.5	3.86	1969	0.28
414	10	2.5	900	250	1.1	6.32	1.51	1.93	37.5	3.86	1969	0.29

415	10	3	500	150	3.8	6.32	1.51	1.93	45	3.86	1969	0.32
416	10	3	750	150	1.9	6.32	1.51	1.93	45	3.86	1969	0.31
417	10	3	900	150	1.4	6.32	1.51	1.93	45	3.86	1969	0.31
418	10	3	500	200	3.3	6.32	1.51	1.93	45	3.86	1969	0.31
419	10	3	750	200	1.6	6.32	1.51	1.93	45	3.86	1969	0.26
420	10	3	900	200	1.2	6.32	1.51	1.93	45	3.86	1969	0.29
421	10	3	500	250	2.9	6.32	1.51	1.93	45	3.86	1969	0.29
422	10	3	750	250	1.5	6.32	1.51	1.93	45	3.86	1969	0.27
423	10	3	900	250	1.1	6.32	1.51	1.93	45	3.86	1969	0.25
424	10	4.5	500	150	3.8	6.32	1.51	1.93	67.5	3.86	1969	0.4
425	10	4.5	750	150	1.9	6.32	1.51	1.93	67.5	3.86	1969	0.34
426	10	4.5	900	150	1.4	6.32	1.51	1.93	67.5	3.86	1969	0.32
427	10	4.5	500	200	3.3	6.32	1.51	1.93	67.5	3.86	1969	0.44
428	10	4.5	750	200	1.6	6.32	1.51	1.93	67.5	3.86	1969	0.35
429	10	4.5	900	200	1.2	6.32	1.51	1.93	67.5	3.86	1969	0.35
430	10	4.5	500	250	2.9	6.32	1.51	1.93	67.5	3.86	1969	0.42
431	10	4.5	750	250	1.5	6.32	1.51	1.93	67.5	3.86	1969	0.37
432	10	4.5	900	250	1.1	6.32	1.51	1.93	67.5	3.86	1969	0.34
433	21.5	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	1.16
434	21.5	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	0.85
435	21.5	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	0.75
436	35	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	1.66
437	35	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	1.26
438	35	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	1.14
439	47.5	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	2.05
440	47.5	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	1.55
441	47.5	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	1.39
442	21.5	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	1.13
443	21.5	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	0.85
444	21.5	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	0.62
445	35	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	1.63
446	35	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	1.243
447	35	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	1.12
448	47.5	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	2.02
449	47.5	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	1.53

450	47.5	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	1.39
451	21.5	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	1.11
452	21.5	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	0.81
453	21.5	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	0.72
454	35	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	1.62
455	35	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	1.23
456	35	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	1.12
457	47.5	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	2.01
458	47.5	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	1.52
459	47.5	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	1.39
460	21.5	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	0.998
461	21.5	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	0.72
462	21.5	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	0.6
463	35	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	1.48
464	35	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	1.13
465	35	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	0.997
466	47.5	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	1.85
467	47.5	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	1.4
468	47.5	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	1.26
469	21.5	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	0.97
470	21.5	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	0.7
471	21.5	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	0.57
472	35	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	1.44
473	35	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	1.11
474	35	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	0.98
475	47.5	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	1.82
476	47.5	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	1.39
477	47.5	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	1.25
478	21.5	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	0.93
479	21.5	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	0.663
480	21.5	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	0.56
481	35	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	1.42
482	35	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	1.08
483	35	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	0.97
484	47.5	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	1.8

485	47.5	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	1.37
486	47.5	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	1.24
487	21.5	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	0.71
488	21.5	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	0.38
489	21.5	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.28
490	35	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	1.18
491	35	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	0.79
492	35	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.69
493	47.5	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	1.51
494	47.5	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	1.08
495	47.5	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.95
496	21.5	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	0.63
497	21.5	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	0.34
498	21.5	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.26
499	35	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	1.11
500	35	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	0.77
501	35	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.67
502	47.5	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	1.46
503	47.5	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	1.06
504	47.5	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	1.03
505	21.5	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	0.57
506	21.5	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	0.31
507	21.5	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.25
508	35	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	1.06
509	35	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	0.75
510	35	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.66
511	47.5	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	1.41
512	47.5	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	1.04
513	47.5	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.94
514	10	2.5	500	150	20.3	6.32	4.25	4.47	37.5	8.93	2229	0.35
515	10	2.5	750	150	10.2	6.32	4.25	4.47	37.5	8.93	2229	0.21
516	10	2.5	900	150	7.5	6.32	4.25	4.47	37.5	8.93	2229	0.18
517	10	2.5	500	200	17.6	6.32	4.25	4.47	37.5	8.93	2229	0.31
518	10	2.5	750	200	8.8	6.32	4.25	4.47	37.5	8.93	2229	0.17
519	10	2.5	900	200	6.5	6.32	4.25	4.47	37.5	8.93	2229	0.17

520	10	2.5	500	250	15.7	6.32	4.25	4.47	37.5	8.93	2229	0.3
521	10	2.5	750	250	7.9	6.32	4.25	4.47	37.5	8.93	2229	0.15
522	10	2.5	900	250	5.8	6.32	4.25	4.47	37.5	8.93	2229	0.16
523	10	3	500	150	20.3	6.32	4.25	4.47	45	8.93	2229	0.28
524	10	3	750	150	10.2	6.32	4.25	4.47	45	8.93	2229	0.2
525	10	3	900	150	7.5	6.32	4.25	4.47	45	8.93	2229	0.17
526	10	3	500	200	17.6	6.32	4.25	4.47	45	8.93	2229	0.25
527	10	3	750	200	8.8	6.32	4.25	4.47	45	8.93	2229	0.19
528	10	3	900	200	6.5	6.32	4.25	4.47	45	8.93	2229	0.19
529	10	3	500	250	15.7	6.32	4.25	4.47	45	8.93	2229	0.23
530	10	3	750	250	7.9	6.32	4.25	4.47	45	8.93	2229	0.19
531	10	3	900	250	5.8	6.32	4.25	4.47	45	8.93	2229	0.15
532	10	4.5	500	150	20.3	6.32	4.25	4.47	67.5	8.93	2229	0.26
533	10	4.5	750	150	10.2	6.32	4.25	4.47	67.5	8.93	2229	0.21
534	10	4.5	900	150	7.5	6.32	4.25	4.47	67.5	8.93	2229	0.21
535	10	4.5	500	200	17.6	6.32	4.25	4.47	67.5	8.93	2229	0.25
536	10	4.5	750	200	8.8	6.32	4.25	4.47	67.5	8.93	2229	0.2
537	10	4.5	900	200	6.5	6.32	4.25	4.47	67.5	8.93	2229	0.2
538	10	4.5	500	250	15.7	6.32	4.25	4.47	67.5	8.93	2229	0.24
539	10	4.5	750	250	7.9	6.32	4.25	4.47	67.5	8.93	2229	0.19
540	10	4.5	900	250	5.8	6.32	4.25	4.47	67.5	8.93	2229	0.19
541	21.5	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.21
542	21.5	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	0.99
543	21.5	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	0.9
544	35	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.6
545	35	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	1.31
546	35	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	1.19
547	47.5	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	1.91
548	47.5	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	1.54
549	47.5	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	1.4
550	21.5	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.19
551	21.5	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	0.97
552	21.5	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	0.88
553	35	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.58
554	35	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	1.3

555	35	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	1.19
556	47.5	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	1.9
557	47.5	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	1.53
558	47.5	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	1.4
559	21.5	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	1.17
560	21.5	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	0.97
561	21.5	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	0.87
562	35	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	1.56
563	35	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	1.3
564	35	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	1.18
565	47.5	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	1.9
566	47.5	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	1.53
567	47.5	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	1.39
568	21.5	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.12
569	21.5	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	0.87
570	21.5	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	0.77
571	35	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.5
572	35	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	1.19
573	35	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	1.09
574	47.5	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	1.8
575	47.5	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	1.42
576	47.5	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	1.3
577	21.5	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.08
578	21.5	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	0.86
579	21.5	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	0.76
580	35	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.5
581	35	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	1.2
582	35	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	1.07
583	47.5	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	1.74
584	47.5	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	1.41
585	47.5	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	1.28
586	21.5	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.06
587	21.5	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	0.83
588	21.5	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	0.76
589	35	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.43

590	35	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	1.17
591	35	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	1.07
592	47.5	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	1.73
593	47.5	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	1.4
594	47.5	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	1.28
595	21.5	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	0.96
596	21.5	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	0.66
597	21.5	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	0.5
598	35	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	1.33
599	35	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	0.99
600	35	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	0.86
601	47.5	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	1.62
602	47.5	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	1.2
603	47.5	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	1.06
604	21.5	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	0.86
605	21.5	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	0.55
606	21.5	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	0.44
607	35	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	1.21
608	35	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	0.92
609	35	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	0.82
610	47.5	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	1.46
611	47.5	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	1.16
612	47.5	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	1.03
613	21.5	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	0.82
614	21.5	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	0.54
615	21.5	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	0.42
616	35	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	1.17
617	35	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	0.91
618	35	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	0.81
619	47.5	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	1.43
620	47.5	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	1.14
621	47.5	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	1.02
622	10	2.5	500	150	35.1	6.32	6.69	6.50	37.5	13	2345	0.6
623	10	2.5	750	150	17.7	6.32	6.69	6.50	37.5	13	2345	0.36
624	10	2.5	900	150	13.0	6.32	6.69	6.50	37.5	13	2345	0.26

625	10	2.5	500	200	30.4	6.32	6.69	6.50	37.5	13	2345	0.58
626	10	2.5	750	200	15.3	6.32	6.69	6.50	37.5	13	2345	0.32
627	10	2.5	900	200	11.3	6.32	6.69	6.50	37.5	13	2345	0.26
628	10	2.5	500	250	27.2	6.32	6.69	6.50	37.5	13	2345	0.59
629	10	2.5	750	250	13.7	6.32	6.69	6.50	37.5	13	2345	0.33
630	10	2.5	900	250	10.1	6.32	6.69	6.50	37.5	13	2345	0.22
631	10	3	500	150	35.1	6.32	6.69	6.50	45	13	2345	0.51
632	10	3	750	150	17.7	6.32	6.69	6.50	45	13	2345	0.28
633	10	3	900	150	13.0	6.32	6.69	6.50	45	13	2345	0.22
634	10	3	500	200	30.4	6.32	6.69	6.50	45	13	2345	0.46
635	10	3	750	200	15.3	6.32	6.69	6.50	45	13	2345	0.23
636	10	3	900	200	11.3	6.32	6.69	6.50	45	13	2345	0.18
637	10	3	500	250	27.2	6.32	6.69	6.50	45	13	2345	0.44
638	10	3	750	250	13.7	6.32	6.69	6.50	45	13	2345	0.22
639	10	3	900	250	10.1	6.32	6.69	6.50	45	13	2345	0.2
640	10	4.5	500	150	35.1	6.32	6.69	6.50	67.5	13	2345	0.38
641	10	4.5	750	150	17.7	6.32	6.69	6.50	67.5	13	2345	0.22
642	10	4.5	900	150	13.0	6.32	6.69	6.50	67.5	13	2345	0.2
643	10	4.5	500	200	30.4	6.32	6.69	6.50	67.5	13	2345	0.3
644	10	4.5	750	200	15.3	6.32	6.69	6.50	67.5	13	2345	0.22
645	10	4.5	900	200	11.3	6.32	6.69	6.50	67.5	13	2345	0.22
646	10	4.5	500	250	27.2	6.32	6.69	6.50	67.5	13	2345	0.27
647	10	4.5	750	250	13.7	6.32	6.69	6.50	67.5	13	2345	0.2
648	10	4.5	900	250	10.1	6.32	6.69	6.50	67.5	13	2345	0.2
649	21.5	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	0.57
650	21.5	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	0.49
651	21.5	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	0.51
652	35	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	1.26
653	35	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	1.05
654	35	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	1
655	47.5	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	1.79
656	47.5	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	1.44
657	47.5	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	1.34
658	21.5	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	0.58
659	21.5	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	0.49

660	21.5	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	0.52
661	35	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	1.25
662	35	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	1.04
663	35	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	1.02
664	47.5	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	1.79
665	47.5	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	1.43
666	47.5	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	1.35
667	21.5	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	0.58
668	21.5	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	0.46
669	21.5	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	0.53
670	35	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	1.25
671	35	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	1.02
672	35	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	1.02
673	47.5	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	1.79
674	47.5	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	1.41
675	47.5	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	1.36
676	21.5	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	0.39
677	21.5	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	0.35
678	21.5	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	0.35
679	35	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	0.97
680	35	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	0.81
681	35	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	0.79
682	47.5	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	1.5
683	47.5	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	1.21
684	47.5	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	1.15
685	21.5	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	0.39
686	21.5	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	0.35
687	21.5	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	0.34
688	35	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	0.94
689	35	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	0.81
690	35	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	0.79
691	47.5	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	1.46
692	47.5	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	1.2
693	47.5	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	1.14
694	21.5	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	0.39

695	21.5	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	0.31
696	21.5	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	0.35
697	35	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	0.96
698	35	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	0.78
699	35	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	0.79
700	47.5	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	1.49
701	47.5	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	1.19
702	47.5	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	1.15
703	21.5	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.25
704	21.5	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.24
705	21.5	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.22
706	35	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.51
707	35	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.4
708	35	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.4
709	47.5	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.9
710	47.5	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.72
711	47.5	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.72
712	21.5	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.26
713	21.5	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.23
714	21.5	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.2
715	35	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.48
716	35	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.36
717	35	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.39
718	47.5	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.87
719	47.5	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.71
720	47.5	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.7
721	21.5	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.25
722	21.5	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.22
723	21.5	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.21
724	35	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.48
725	35	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.35
726	35	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.4
727	47.5	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.86
728	47.5	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.71
729	47.5	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.7

730	10	2.5	500	150	3.8	3.87	1.51	1.93	37.5	3.86	1969	0.23
731	10	2.5	750	150	1.9	3.87	1.51	1.93	37.5	3.86	1969	0.18
732	10	2.5	900	150	1.4	3.87	1.51	1.93	37.5	3.86	1969	0.19
733	10	2.5	500	200	3.3	3.87	1.51	1.93	37.5	3.86	1969	0.19
734	10	2.5	750	200	1.6	3.87	1.51	1.93	37.5	3.86	1969	0.18
735	10	2.5	900	200	1.2	3.87	1.51	1.93	37.5	3.86	1969	0.2
736	10	2.5	500	250	2.9	3.87	1.51	1.93	37.5	3.86	1969	0.21
737	10	2.5	750	250	1.5	3.87	1.51	1.93	37.5	3.86	1969	0.16
738	10	2.5	900	250	1.1	3.87	1.51	1.93	37.5	3.86	1969	0.2
739	10	3	500	150	3.8	3.87	1.51	1.93	45	3.86	1969	0.24
740	10	3	750	150	1.9	3.87	1.51	1.93	45	3.86	1969	0.25
741	10	3	900	150	1.4	3.87	1.51	1.93	45	3.86	1969	0.18
742	10	3	500	200	3.3	3.87	1.51	1.93	45	3.86	1969	0.24
743	10	3	750	200	1.6	3.87	1.51	1.93	45	3.86	1969	0.21
744	10	3	900	200	1.2	3.87	1.51	1.93	45	3.86	1969	0.16
745	10	3	500	250	2.9	3.87	1.51	1.93	45	3.86	1969	0.22
746	10	3	750	250	1.5	3.87	1.51	1.93	45	3.86	1969	0.23
747	10	3	900	250	1.1	3.87	1.51	1.93	45	3.86	1969	0.17
748	10	4.5	500	150	3.8	3.87	1.51	1.93	67.5	3.86	1969	0.27
749	10	4.5	750	150	1.9	3.87	1.51	1.93	67.5	3.86	1969	0.23
750	10	4.5	900	150	1.4	3.87	1.51	1.93	67.5	3.86	1969	0.25
751	10	4.5	500	200	3.3	3.87	1.51	1.93	67.5	3.86	1969	0.27
752	10	4.5	750	200	1.6	3.87	1.51	1.93	67.5	3.86	1969	0.23
753	10	4.5	900	200	1.2	3.87	1.51	1.93	67.5	3.86	1969	0.23
754	10	4.5	500	250	2.9	3.87	1.51	1.93	67.5	3.86	1969	0.29
755	10	4.5	750	250	1.5	3.87	1.51	1.93	67.5	3.86	1969	0.26
756	10	4.5	900	250	1.1	3.87	1.51	1.93	67.5	3.86	1969	0.24
757	21.5	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	1.05
758	21.5	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	0.77
759	21.5	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	0.68
760	35	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	1.48
761	35	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	1.14
762	35	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	1.04
763	47.5	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	1.8
764	47.5	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	1.4

765	47.5	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	1.27
766	21.5	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.02
767	21.5	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	0.77
768	21.5	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	0.66
769	35	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.45
770	35	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	1.13
771	35	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	1.03
772	47.5	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	1.78
773	47.5	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	1.38
774	47.5	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	1.26
775	21.5	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	0.997
776	21.5	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	0.74
777	21.5	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	0.65
778	35	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	1.44
779	35	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	1.12
780	35	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	1.03
781	47.5	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	1.77
782	47.5	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	1.37
783	47.5	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	1.27
784	21.5	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	0.9
785	21.5	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	0.65
786	21.5	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	0.54
787	35	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	1.32
788	35	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	1.02
789	35	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	0.91
790	47.5	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	1.64
791	47.5	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	1.27
792	47.5	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	1.15
793	21.5	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	0.87
794	21.5	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	0.62
795	21.5	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	0.52
796	35	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	1.28
797	35	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	1
798	35	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	0.9
799	47.5	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	1.61

800	47.5	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	1.26
801	47.5	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	1.14
802	21.5	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	0.83
803	21.5	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	0.6
804	21.5	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	0.5
805	35	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	1.26
806	35	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	0.984
807	35	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	0.883
808	47.5	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	1.59
809	47.5	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	1.24
810	47.5	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	1.13
811	21.5	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	0.63
812	21.5	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.33
813	21.5	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.24
814	35	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	1.05
815	35	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.71
816	35	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.63
817	47.5	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	1.34
818	47.5	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.97
819	47.5	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.86
820	21.5	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	0.553
821	21.5	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.29
822	21.5	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.22
823	35	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	0.99
824	35	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.69
825	35	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.6
826	47.5	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	1.29
827	47.5	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.96
828	47.5	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.94
829	21.5	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	0.5
830	21.5	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.26
831	21.5	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.21
832	35	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	0.94
833	35	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.68
834	35	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.6

835	47.5	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	1.24
836	47.5	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.94
837	47.5	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.85
838	10	2.5	500	150	20.3	3.87	4.25	4.47	37.5	8.93	2229	0.3
839	10	2.5	750	150	10.2	3.87	4.25	4.47	37.5	8.93	2229	0.15
840	10	2.5	900	150	7.5	3.87	4.25	4.47	37.5	8.93	2229	0.14
841	10	2.5	500	200	17.6	3.87	4.25	4.47	37.5	8.93	2229	0.27
842	10	2.5	750	200	8.8	3.87	4.25	4.47	37.5	8.93	2229	0.13
843	10	2.5	900	200	6.5	3.87	4.25	4.47	37.5	8.93	2229	0.14
844	10	2.5	500	250	15.7	3.87	4.25	4.47	37.5	8.93	2229	0.26
845	10	2.5	750	250	7.9	3.87	4.25	4.47	37.5	8.93	2229	0.11
846	10	2.5	900	250	5.8	3.87	4.25	4.47	37.5	8.93	2229	0.13
847	10	3	500	150	20.3	3.87	4.25	4.47	45	8.93	2229	0.23
848	10	3	750	150	10.2	3.87	4.25	4.47	45	8.93	2229	0.14
849	10	3	900	150	7.5	3.87	4.25	4.47	45	8.93	2229	0.13
850	10	3	500	200	17.6	3.87	4.25	4.47	45	8.93	2229	0.2
851	10	3	750	200	8.8	3.87	4.25	4.47	45	8.93	2229	0.16
852	10	3	900	200	6.5	3.87	4.25	4.47	45	8.93	2229	0.12
853	10	3	500	250	15.7	3.87	4.25	4.47	45	8.93	2229	0.18
854	10	3	750	250	7.9	3.87	4.25	4.47	45	8.93	2229	0.13
855	10	3	900	250	5.8	3.87	4.25	4.47	45	8.93	2229	0.15
856	10	4.5	500	150	20.3	3.87	4.25	4.47	67.5	8.93	2229	0.2
857	10	4.5	750	150	10.2	3.87	4.25	4.47	67.5	8.93	2229	0.14
858	10	4.5	900	150	7.5	3.87	4.25	4.47	67.5	8.93	2229	0.14
859	10	4.5	500	200	17.6	3.87	4.25	4.47	67.5	8.93	2229	0.2
860	10	4.5	750	200	8.8	3.87	4.25	4.47	67.5	8.93	2229	0.14
861	10	4.5	900	200	6.5	3.87	4.25	4.47	67.5	8.93	2229	0.14
862	10	4.5	500	250	15.7	3.87	4.25	4.47	67.5	8.93	2229	0.18
863	10	4.5	750	250	7.9	3.87	4.25	4.47	67.5	8.93	2229	0.14
864	10	4.5	900	250	5.8	3.87	4.25	4.47	67.5	8.93	2229	0.12
865	21.5	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.1
866	21.5	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	0.91
867	21.5	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	0.83
868	35	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.43
869	35	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	1.2

870	35	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	1.1
871	47.5	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	1.7
872	47.5	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	1.4
873	47.5	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	1.29
874	21.5	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.09
875	21.5	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	0.9
876	21.5	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	0.82
877	35	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.42
878	35	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	1.19
879	35	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	1.1
880	47.5	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	1.69
881	47.5	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	1.39
882	47.5	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	1.28
883	21.5	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.07
884	21.5	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	0.9
885	21.5	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	0.81
886	35	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.4
887	35	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	1.18
888	35	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	1.09
889	47.5	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	1.68
890	47.5	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	1.39
891	47.5	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	1.28
892	21.5	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.02
893	21.5	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	0.81
894	21.5	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	0.72
895	35	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.34
896	35	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	1.09
897	35	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	1.01
898	47.5	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	1.6
899	47.5	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	1.29
900	47.5	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	1.19
901	21.5	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	0.98
902	21.5	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	0.8
903	21.5	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	0.71
904	35	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	1.3

905	35	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	1.1
906	35	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	0.99
907	47.5	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	1.55
908	47.5	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	1.3
909	47.5	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	1.18
910	21.5	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	0.97
911	21.5	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	0.77
912	21.5	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	0.7
913	35	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	1.29
914	35	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	1.07
915	35	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	0.99
916	47.5	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	1.54
917	47.5	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	1.27
918	47.5	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	1.18
919	21.5	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	0.87
920	21.5	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	0.6
921	21.5	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.45
922	35	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	1.2
923	35	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	0.91
924	35	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.79
925	47.5	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	1.44
926	47.5	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	1.1
927	47.5	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.98
928	21.5	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	0.78
929	21.5	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	0.5
930	21.5	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.4
931	35	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	1.09
932	35	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	0.85
933	35	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.76
934	47.5	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	1.31
935	47.5	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	1.06
936	47.5	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.95
937	21.5	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	0.75
938	21.5	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	0.49
939	21.5	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.38

940	35	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	1.06
941	35	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	0.84
942	35	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.75
943	47.5	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	1.28
944	47.5	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	1.04
945	47.5	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.94
946	10	2.5	500	150	35.1	3.87	6.69	6.50	37.5	13	2345	0.55
947	10	2.5	750	150	17.7	3.87	6.69	6.50	37.5	13	2345	0.33
948	10	2.5	900	150	13.0	3.87	6.69	6.50	37.5	13	2345	0.24
949	10	2.5	500	200	30.4	3.87	6.69	6.50	37.5	13	2345	0.54
950	10	2.5	750	200	15.3	3.87	6.69	6.50	37.5	13	2345	0.29
951	10	2.5	900	200	11.3	3.87	6.69	6.50	37.5	13	2345	0.24
952	10	2.5	500	250	27.2	3.87	6.69	6.50	37.5	13	2345	0.52
953	10	2.5	750	250	13.7	3.87	6.69	6.50	37.5	13	2345	0.3
954	10	2.5	900	250	10.1	3.87	6.69	6.50	37.5	13	2345	0.22
955	10	3	500	150	35.1	3.87	6.69	6.50	45	13	2345	0.47
956	10	3	750	150	17.7	3.87	6.69	6.50	45	13	2345	0.25
957	10	3	900	150	13.0	3.87	6.69	6.50	45	13	2345	0.19
958	10	3	500	200	30.4	3.87	6.69	6.50	45	13	2345	0.42
959	10	3	750	200	15.3	3.87	6.69	6.50	45	13	2345	0.21
960	10	3	900	200	11.3	3.87	6.69	6.50	45	13	2345	0.15
961	10	3	500	250	27.2	3.87	6.69	6.50	45	13	2345	0.4
962	10	3	750	250	13.7	3.87	6.69	6.50	45	13	2345	0.19
963	10	3	900	250	10.1	3.87	6.69	6.50	45	13	2345	0.17
964	10	4.5	500	150	35.1	3.87	6.69	6.50	67.5	13	2345	0.33
965	10	4.5	750	150	17.7	3.87	6.69	6.50	67.5	13	2345	0.19
966	10	4.5	900	150	13.0	3.87	6.69	6.50	67.5	13	2345	0.17
967	10	4.5	500	200	30.4	3.87	6.69	6.50	67.5	13	2345	0.27
968	10	4.5	750	200	15.3	3.87	6.69	6.50	67.5	13	2345	0.19
969	10	4.5	900	200	11.3	3.87	6.69	6.50	67.5	13	2345	0.18
970	10	4.5	500	250	27.2	3.87	6.69	6.50	67.5	13	2345	0.24
971	10	4.5	750	250	13.7	3.87	6.69	6.50	67.5	13	2345	0.17
972	10	4.5	900	250	10.1	3.87	6.69	6.50	67.5	13	2345	0.17
973	21.5	2.5	500	150	3.8	2.04	1.51	1.93	37.5	3.86	1969	0.48
974	21.5	2.5	750	150	1.9	2.04	1.51	1.93	37.5	3.86	1969	0.42

975	21.5	2.5	900	150	1.4	2.04	1.51	1.93	37.5	3.86	1969	0.42
976	35	2.5	500	150	3.8	2.04	1.51	1.93	37.5	3.86	1969	1.11
977	35	2.5	750	150	1.9	2.04	1.51	1.93	37.5	3.86	1969	0.93
978	35	2.5	900	150	1.4	2.04	1.51	1.93	37.5	3.86	1969	0.91
979	47.5	2.5	500	150	3.8	2.04	1.51	1.93	37.5	3.86	1969	1.58
980	47.5	2.5	750	150	1.9	2.04	1.51	1.93	37.5	3.86	1969	1.29
981	47.5	2.5	900	150	1.4	2.04	1.51	1.93	37.5	3.86	1969	1.22
982	21.5	2.5	500	200	3.3	2.04	1.51	1.93	37.5	3.86	1969	0.47
983	21.5	2.5	750	200	1.6	2.04	1.51	1.93	37.5	3.86	1969	0.4
984	21.5	2.5	900	200	1.2	2.04	1.51	1.93	37.5	3.86	1969	0.42
985	35	2.5	500	200	3.3	2.04	1.51	1.93	37.5	3.86	1969	1.1
986	35	2.5	750	200	1.6	2.04	1.51	1.93	37.5	3.86	1969	0.93
987	35	2.5	900	200	1.2	2.04	1.51	1.93	37.5	3.86	1969	0.92
988	47.5	2.5	500	200	3.3	2.04	1.51	1.93	37.5	3.86	1969	1.58
989	47.5	2.5	750	200	1.6	2.04	1.51	1.93	37.5	3.86	1969	1.29
990	47.5	2.5	900	200	1.2	2.04	1.51	1.93	37.5	3.86	1969	1.23
991	21.5	2.5	500	250	2.9	2.04	1.51	1.93	37.5	3.86	1969	0.48
992	21.5	2.5	750	250	1.5	2.04	1.51	1.93	37.5	3.86	1969	0.37
993	21.5	2.5	900	250	1.1	2.04	1.51	1.93	37.5	3.86	1969	0.44
994	35	2.5	500	250	2.9	2.04	1.51	1.93	37.5	3.86	1969	1.11
995	35	2.5	750	250	1.5	2.04	1.51	1.93	37.5	3.86	1969	0.9
996	35	2.5	900	250	1.1	2.04	1.51	1.93	37.5	3.86	1969	0.91
997	47.5	2.5	500	250	2.9	2.04	1.51	1.93	37.5	3.86	1969	1.58
998	47.5	2.5	750	250	1.5	2.04	1.51	1.93	37.5	3.86	1969	1.27
999	47.5	2.5	900	250	1.1	2.04	1.51	1.93	37.5	3.86	1969	1.24
1000	21.5	3	500	150	3.8	2.04	1.51	1.93	45	3.86	1969	0.29
1001	21.5	3	750	150	1.9	2.04	1.51	1.93	45	3.86	1969	0.23
1002	21.5	3	900	150	1.4	2.04	1.51	1.93	45	3.86	1969	0.25
1003	35	3	500	150	3.8	2.04	1.51	1.93	45	3.86	1969	0.84
1004	35	3	750	150	1.9	2.04	1.51	1.93	45	3.86	1969	0.7
1005	35	3	900	150	1.4	2.04	1.51	1.93	45	3.86	1969	0.7
1006	47.5	3	500	150	3.8	2.04	1.51	1.93	45	3.86	1969	1.32
1007	47.5	3	750	150	1.9	2.04	1.51	1.93	45	3.86	1969	1.07
1008	47.5	3	900	150	1.4	2.04	1.51	1.93	45	3.86	1969	1.04
1009	21.5	3	500	200	3.3	2.04	1.51	1.93	45	3.86	1969	0.26

1010	21.5	3	750	200	1.6	2.04	1.51	1.93	45	3.86	1969	0.23
1011	21.5	3	900	200	1.2	2.04	1.51	1.93	45	3.86	1969	0.25
1012	35	3	500	200	3.3	2.04	1.51	1.93	45	3.86	1969	0.82
1013	35	3	750	200	1.6	2.04	1.51	1.93	45	3.86	1969	0.69
1014	35	3	900	200	1.2	2.04	1.51	1.93	45	3.86	1969	0.7
1015	47.5	3	500	200	3.3	2.04	1.51	1.93	45	3.86	1969	1.28
1016	47.5	3	750	200	1.6	2.04	1.51	1.93	45	3.86	1969	1.07
1017	47.5	3	900	200	1.2	2.04	1.51	1.93	45	3.86	1969	1.03
1018	21.5	3	500	250	2.9	2.04	1.51	1.93	45	3.86	1969	0.29
1019	21.5	3	750	250	1.5	2.04	1.51	1.93	45	3.86	1969	0.21
1020	21.5	3	900	250	1.1	2.04	1.51	1.93	45	3.86	1969	0.26
1021	35	3	500	250	2.9	2.04	1.51	1.93	45	3.86	1969	0.83
1022	35	3	750	250	1.5	2.04	1.51	1.93	45	3.86	1969	0.68
1023	35	3	900	250	1.1	2.04	1.51	1.93	45	3.86	1969	0.7
1024	47.5	3	500	250	2.9	2.04	1.51	1.93	45	3.86	1969	1.31
1025	47.5	3	750	250	1.5	2.04	1.51	1.93	45	3.86	1969	1.06
1026	47.5	3	900	250	1.1	2.04	1.51	1.93	45	3.86	1969	1.04
1027	21.5	4.5	500	150	3.8	2.04	1.51	1.93	67.5	3.86	1969	0.13
1028	21.5	4.5	750	150	1.9	2.04	1.51	1.93	67.5	3.86	1969	0.1
1029	21.5	4.5	900	150	1.4	2.04	1.51	1.93	67.5	3.86	1969	0.1
1030	35	4.5	500	150	3.8	2.04	1.51	1.93	67.5	3.86	1969	0.38
1031	35	4.5	750	150	1.9	2.04	1.51	1.93	67.5	3.86	1969	0.29
1032	35	4.5	900	150	1.4	2.04	1.51	1.93	67.5	3.86	1969	0.3
1033	47.5	4.5	500	150	3.8	2.04	1.51	1.93	67.5	3.86	1969	0.77
1034	47.5	4.5	750	150	1.9	2.04	1.51	1.93	67.5	3.86	1969	0.61
1035	47.5	4.5	900	150	1.4	2.04	1.51	1.93	67.5	3.86	1969	0.62
1036	21.5	4.5	500	200	3.3	2.04	1.51	1.93	67.5	3.86	1969	0.13
1037	21.5	4.5	750	200	1.6	2.04	1.51	1.93	67.5	3.86	1969	0.1
1038	21.5	4.5	900	200	1.2	2.04	1.51	1.93	67.5	3.86	1969	0.11
1039	35	4.5	500	200	3.3	2.04	1.51	1.93	67.5	3.86	1969	0.36
1040	35	4.5	750	200	1.6	2.04	1.51	1.93	67.5	3.86	1969	0.25
1041	35	4.5	900	200	1.2	2.04	1.51	1.93	67.5	3.86	1969	0.3
1042	47.5	4.5	500	200	3.3	2.04	1.51	1.93	67.5	3.86	1969	0.73
1043	47.5	4.5	750	200	1.6	2.04	1.51	1.93	67.5	3.86	1969	0.6
1044	47.5	4.5	900	200	1.2	2.04	1.51	1.93	67.5	3.86	1969	0.61

1045	21.5	4.5	500	250	2.9	2.04	1.51	1.93	67.5	3.86	1969	0.13
1046	21.5	4.5	750	250	1.5	2.04	1.51	1.93	67.5	3.86	1969	0.11
1047	21.5	4.5	900	250	1.1	2.04	1.51	1.93	67.5	3.86	1969	0.11
1048	35	4.5	500	250	2.9	2.04	1.51	1.93	67.5	3.86	1969	0.36
1049	35	4.5	750	250	1.5	2.04	1.51	1.93	67.5	3.86	1969	0.25
1050	35	4.5	900	250	1.1	2.04	1.51	1.93	67.5	3.86	1969	0.31
1051	47.5	4.5	500	250	2.9	2.04	1.51	1.93	67.5	3.86	1969	0.73
1052	47.5	4.5	750	250	1.5	2.04	1.51	1.93	67.5	3.86	1969	0.6
1053	47.5	4.5	900	250	1.1	2.04	1.51	1.93	67.5	3.86	1969	0.6
1054	10	2.5	500	150	3.8	2.04	1.51	1.93	37.5	3.86	1969	0.093
1055	10	2.5	750	150	1.9	2.04	1.51	1.93	37.5	3.86	1969	0.075
1056	10	2.5	900	150	1.4	2.04	1.51	1.93	37.5	3.86	1969	0.077
1057	10	2.5	500	200	3.3	2.04	1.51	1.93	37.5	3.86	1969	0.1
1058	10	2.5	750	200	1.6	2.04	1.51	1.93	37.5	3.86	1969	0.12
1059	10	2.5	900	200	1.2	2.04	1.51	1.93	37.5	3.86	1969	0.066
1060	10	2.5	500	250	2.9	2.04	1.51	1.93	37.5	3.86	1969	0.12
1061	10	2.5	750	250	1.5	2.04	1.51	1.93	37.5	3.86	1969	0.071
1062	10	2.5	900	250	1.1	2.04	1.51	1.93	37.5	3.86	1969	0.07
1063	10	3	500	150	3.8	2.04	1.51	1.93	45	3.86	1969	0.1
1064	10	3	750	150	1.9	2.04	1.51	1.93	45	3.86	1969	0.083
1065	10	3	900	150	1.4	2.04	1.51	1.93	45	3.86	1969	0.07
1066	10	3	500	200	3.3	2.04	1.51	1.93	45	3.86	1969	0.094
1067	10	3	750	200	1.6	2.04	1.51	1.93	45	3.86	1969	0.09
1068	10	3	900	200	1.2	2.04	1.51	1.93	45	3.86	1969	0.076
1069	10	3	500	250	2.9	2.04	1.51	1.93	45	3.86	1969	0.085
1070	10	3	750	250	1.5	2.04	1.51	1.93	45	3.86	1969	0.088
1071	10	3	900	250	1.1	2.04	1.51	1.93	45	3.86	1969	0.065
1072	10	4.5	500	150	3.8	2.04	1.51	1.93	67.5	3.86	1969	0.12
1073	10	4.5	750	150	1.9	2.04	1.51	1.93	67.5	3.86	1969	0.098
1074	10	4.5	900	150	1.4	2.04	1.51	1.93	67.5	3.86	1969	0.095
1075	10	4.5	500	200	3.3	2.04	1.51	1.93	67.5	3.86	1969	0.13
1076	10	4.5	750	200	1.6	2.04	1.51	1.93	67.5	3.86	1969	0.099
1077	10	4.5	900	200	1.2	2.04	1.51	1.93	67.5	3.86	1969	0.092
1078	10	4.5	500	250	2.9	2.04	1.51	1.93	67.5	3.86	1969	0.13
1079	10	4.5	750	250	1.5	2.04	1.51	1.93	67.5	3.86	1969	0.12

1080	10	4.5	900	250	1.1	2.04	1.51	1.93	67.5	3.86	1969	0.087
1081	21.5	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	0.96
1082	21.5	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	0.72
1083	21.5	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	0.64
1084	35	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	1.34
1085	35	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	1.05
1086	35	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	0.97
1087	47.5	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	1.62
1088	47.5	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	1.28
1089	47.5	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	1.18
1090	21.5	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	0.94
1091	21.5	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	0.71
1092	21.5	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	0.62
1093	35	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	1.32
1094	35	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	1.04
1095	35	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	0.95
1096	47.5	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	1.6
1097	47.5	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	1.27
1098	47.5	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	1.17
1099	21.5	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	0.91
1100	21.5	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	0.68
1101	21.5	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	0.61
1102	35	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	1.31
1103	35	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	1.03
1104	35	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	0.96
1105	47.5	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	1.6
1106	47.5	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	1.26
1107	47.5	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	1.18
1108	21.5	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	0.82
1109	21.5	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	0.6
1110	21.5	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	0.5
1111	35	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	1.2
1112	35	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	0.95
1113	35	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	0.85
1114	47.5	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	1.48

1115	47.5	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	1.17
1116	47.5	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	1.07
1117	21.5	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	0.8
1118	21.5	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	0.57
1119	21.5	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	0.48
1120	35	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	1.17
1121	35	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	0.94
1122	35	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	0.84
1123	47.5	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	1.45
1124	47.5	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	1.16
1125	47.5	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	1.06
1126	21.5	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	0.76
1127	21.5	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	0.55
1128	21.5	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	0.46
1129	35	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	1.15
1130	35	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	0.91
1131	35	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	0.82
1132	47.5	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	1.43
1133	47.5	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	1.14
1134	47.5	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	1.05
1135	21.5	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	0.57
1136	21.5	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.29
1137	21.5	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.19
1138	35	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	0.95
1139	35	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.65
1140	35	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.57
1141	47.5	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	1.21
1142	47.5	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.89
1143	47.5	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.8
1144	21.5	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	0.5
1145	21.5	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.25
1146	21.5	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.18
1147	35	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	0.9
1148	35	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.63
1149	35	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.55

1150	47.5	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	1.17
1151	47.5	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.88
1152	47.5	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.88
1153	21.5	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	0.44
1154	21.5	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.21
1155	21.5	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.17
1156	35	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	0.85
1157	35	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.62
1158	35	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.55
1159	47.5	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	1.13
1160	47.5	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.86
1161	47.5	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.79
1162	10	2.5	500	150	20.3	2.04	4.25	4.47	37.5	8.93	2229	0.27
1163	10	2.5	750	150	10.2	2.04	4.25	4.47	37.5	8.93	2229	0.12
1164	10	2.5	900	150	7.5	2.04	4.25	4.47	37.5	8.93	2229	0.075
1165	10	2.5	500	200	17.6	2.04	4.25	4.47	37.5	8.93	2229	0.24
1166	10	2.5	750	200	8.8	2.04	4.25	4.47	37.5	8.93	2229	0.1
1167	10	2.5	900	200	6.5	2.04	4.25	4.47	37.5	8.93	2229	0.078
1168	10	2.5	500	250	15.7	2.04	4.25	4.47	37.5	8.93	2229	0.23
1169	10	2.5	750	250	7.9	2.04	4.25	4.47	37.5	8.93	2229	0.11
1170	10	2.5	900	250	5.8	2.04	4.25	4.47	37.5	8.93	2229	0.7
1171	10	3	500	150	20.3	2.04	4.25	4.47	45	8.93	2229	0.21
1172	10	3	750	150	10.2	2.04	4.25	4.47	45	8.93	2229	0.12
1173	10	3	900	150	7.5	2.04	4.25	4.47	45	8.93	2229	0.074
1174	10	3	500	200	17.6	2.04	4.25	4.47	45	8.93	2229	0.16
1175	10	3	750	200	8.8	2.04	4.25	4.47	45	8.93	2229	0.086
1176	10	3	900	200	6.5	2.04	4.25	4.47	45	8.93	2229	0.098
1177	10	3	500	250	15.7	2.04	4.25	4.47	45	8.93	2229	0.15
1178	10	3	750	250	7.9	2.04	4.25	4.47	45	8.93	2229	0.075
1179	10	3	900	250	5.8	2.04	4.25	4.47	45	8.93	2229	0.085
1180	10	4.5	500	150	20.3	2.04	4.25	4.47	67.5	8.93	2229	0.14
1181	10	4.5	750	150	10.2	2.04	4.25	4.47	67.5	8.93	2229	0.1
1182	10	4.5	900	150	7.5	2.04	4.25	4.47	67.5	8.93	2229	0.089
1183	10	4.5	500	200	17.6	2.04	4.25	4.47	67.5	8.93	2229	0.13
1184	10	4.5	750	200	8.8	2.04	4.25	4.47	67.5	8.93	2229	0.098

1185	10	4.5	900	200	6.5	2.04	4.25	4.47	67.5	8.93	2229	0.079
1186	10	4.5	500	250	15.7	2.04	4.25	4.47	67.5	8.93	2229	0.11
1187	10	4.5	750	250	7.9	2.04	4.25	4.47	67.5	8.93	2229	0.1
1188	10	4.5	900	250	5.8	2.04	4.25	4.47	67.5	8.93	2229	0.093
1189	21.5	2.5	500	150	35.1	2.04	6.69	6.50	37.5	13	2345	1.02
1190	21.5	2.5	750	150	17.7	2.04	6.69	6.50	37.5	13	2345	0.86
1191	21.5	2.5	900	150	13.0	2.04	6.69	6.50	37.5	13	2345	0.79
1192	35	2.5	500	150	35.1	2.04	6.69	6.50	37.5	13	2345	1.31
1193	35	2.5	750	150	17.7	2.04	6.69	6.50	37.5	13	2345	1.12
1194	35	2.5	900	150	13.0	2.04	6.69	6.50	37.5	13	2345	1.03
1195	47.5	2.5	500	150	35.1	2.04	6.69	6.50	37.5	13	2345	1.54
1196	47.5	2.5	750	150	17.7	2.04	6.69	6.50	37.5	13	2345	1.3
1197	47.5	2.5	900	150	13.0	2.04	6.69	6.50	37.5	13	2345	1.2
1198	21.5	2.5	500	200	30.4	2.04	6.69	6.50	37.5	13	2345	1.01
1199	21.5	2.5	750	200	15.3	2.04	6.69	6.50	37.5	13	2345	0.85
1200	21.5	2.5	900	200	11.3	2.04	6.69	6.50	37.5	13	2345	0.8
1201	35	2.5	500	200	30.4	2.04	6.69	6.50	37.5	13	2345	1.3
1202	35	2.5	750	200	15.3	2.04	6.69	6.50	37.5	13	2345	1.11
1203	35	2.5	900	200	11.3	2.04	6.69	6.50	37.5	13	2345	1.03
1204	47.5	2.5	500	200	30.4	2.04	6.69	6.50	37.5	13	2345	1.53
1205	47.5	2.5	750	200	15.3	2.04	6.69	6.50	37.5	13	2345	1.29
1206	47.5	2.5	900	200	11.3	2.04	6.69	6.50	37.5	13	2345	1.2
1207	21.5	2.5	500	250	27.2	2.04	6.69	6.50	37.5	13	2345	0.99
1208	21.5	2.5	750	250	13.7	2.04	6.69	6.50	37.5	13	2345	0.84
1209	21.5	2.5	900	250	10.1	2.04	6.69	6.50	37.5	13	2345	0.76
1210	35	2.5	500	250	27.2	2.04	6.69	6.50	37.5	13	2345	1.29
1211	35	2.5	750	250	13.7	2.04	6.69	6.50	37.5	13	2345	1.1
1212	35	2.5	900	250	10.1	2.04	6.69	6.50	37.5	13	2345	1.02
1213	47.5	2.5	500	250	27.2	2.04	6.69	6.50	37.5	13	2345	1.52
1214	47.5	2.5	750	250	13.7	2.04	6.69	6.50	37.5	13	2345	1.29
1215	47.5	2.5	900	250	10.1	2.04	6.69	6.50	37.5	13	2345	1.19
1216	21.5	3	500	150	35.1	2.04	6.69	6.50	45	13	2345	0.95
1217	21.5	3	750	150	17.7	2.04	6.69	6.50	45	13	2345	0.76
1218	21.5	3	900	150	13.0	2.04	6.69	6.50	45	13	2345	0.68
1219	35	3	500	150	35.1	2.04	6.69	6.50	45	13	2345	1.23

1220	35	3	750	150	17.7	2.04	6.69	6.50	45	13	2345	1.02
1221	35	3	900	150	13.0	2.04	6.69	6.50	45	13	2345	0.95
1222	47.5	3	500	150	35.1	2.04	6.69	6.50	45	13	2345	1.44
1223	47.5	3	750	150	17.7	2.04	6.69	6.50	45	13	2345	1.2
1224	47.5	3	900	150	13.0	2.04	6.69	6.50	45	13	2345	1.12
1225	21.5	3	500	200	30.4	2.04	6.69	6.50	45	13	2345	0.91
1226	21.5	3	750	200	15.3	2.04	6.69	6.50	45	13	2345	0.75
1227	21.5	3	900	200	11.3	2.04	6.69	6.50	45	13	2345	0.67
1228	35	3	500	200	30.4	2.04	6.69	6.50	45	13	2345	1.2
1229	35	3	750	200	15.3	2.04	6.69	6.50	45	13	2345	1.01
1230	35	3	900	200	11.3	2.04	6.69	6.50	45	13	2345	0.93
1231	47.5	3	500	200	30.4	2.04	6.69	6.50	45	13	2345	1.42
1232	47.5	3	750	200	15.3	2.04	6.69	6.50	45	13	2345	1.19
1233	47.5	3	900	200	11.3	2.04	6.69	6.50	45	13	2345	1.1
1234	21.5	3	500	250	27.2	2.04	6.69	6.50	45	13	2345	0.9
1235	21.5	3	750	250	13.7	2.04	6.69	6.50	45	13	2345	0.72
1236	21.5	3	900	250	10.1	2.04	6.69	6.50	45	13	2345	0.67
1237	35	3	500	250	27.2	2.04	6.69	6.50	45	13	2345	1.18
1238	35	3	750	250	13.7	2.04	6.69	6.50	45	13	2345	1
1239	35	3	900	250	10.1	2.04	6.69	6.50	45	13	2345	0.93
1240	47.5	3	500	250	27.2	2.04	6.69	6.50	45	13	2345	1.41
1241	47.5	3	750	250	13.7	2.04	6.69	6.50	45	13	2345	1.18
1242	47.5	3	900	250	10.1	2.04	6.69	6.50	45	13	2345	1.1
1243	21.5	4.5	500	150	35.1	2.04	6.69	6.50	67.5	13	2345	0.8
1244	21.5	4.5	750	150	17.7	2.04	6.69	6.50	67.5	13	2345	0.56
1245	21.5	4.5	900	150	13.0	2.04	6.69	6.50	67.5	13	2345	0.42
1246	35	4.5	500	150	35.1	2.04	6.69	6.50	67.5	13	2345	1.1
1247	35	4.5	750	150	17.7	2.04	6.69	6.50	67.5	13	2345	0.85
1248	35	4.5	900	150	13.0	2.04	6.69	6.50	67.5	13	2345	0.74
1249	47.5	4.5	500	150	35.1	2.04	6.69	6.50	67.5	13	2345	1.31
1250	47.5	4.5	750	150	17.7	2.04	6.69	6.50	67.5	13	2345	1.02
1251	47.5	4.5	900	150	13.0	2.04	6.69	6.50	67.5	13	2345	0.91
1252	21.5	4.5	500	200	30.4	2.04	6.69	6.50	67.5	13	2345	0.73
1253	21.5	4.5	750	200	15.3	2.04	6.69	6.50	67.5	13	2345	0.47
1254	21.5	4.5	900	200	11.3	2.04	6.69	6.50	67.5	13	2345	0.37

1255	35	4.5	500	200	30.4	2.04	6.69	6.50	67.5	13	2345	1
1256	35	4.5	750	200	15.3	2.04	6.69	6.50	67.5	13	2345	0.79
1257	35	4.5	900	200	11.3	2.04	6.69	6.50	67.5	13	2345	0.71
1258	47.5	4.5	500	200	30.4	2.04	6.69	6.50	67.5	13	2345	1.2
1259	47.5	4.5	750	200	15.3	2.04	6.69	6.50	67.5	13	2345	0.98
1260	47.5	4.5	900	200	11.3	2.04	6.69	6.50	67.5	13	2345	0.89
1261	21.5	4.5	500	250	27.2	2.04	6.69	6.50	67.5	13	2345	0.7
1262	21.5	4.5	750	250	13.7	2.04	6.69	6.50	67.5	13	2345	0.46
1263	21.5	4.5	900	250	10.1	2.04	6.69	6.50	67.5	13	2345	0.35
1264	35	4.5	500	250	27.2	2.04	6.69	6.50	67.5	13	2345	0.98
1265	35	4.5	750	250	13.7	2.04	6.69	6.50	67.5	13	2345	0.79
1266	35	4.5	900	250	10.1	2.04	6.69	6.50	67.5	13	2345	0.7
1267	47.5	4.5	500	250	27.2	2.04	6.69	6.50	67.5	13	2345	1.18
1268	47.5	4.5	750	250	13.7	2.04	6.69	6.50	67.5	13	2345	0.97
1269	47.5	4.5	900	250	10.1	2.04	6.69	6.50	67.5	13	2345	0.88
1270	10	2.5	500	150	35.1	2.04	6.69	6.50	37.5	13	2345	0.52
1271	10	2.5	750	150	17.7	2.04	6.69	6.50	37.5	13	2345	0.31
1272	10	2.5	900	150	13.0	2.04	6.69	6.50	37.5	13	2345	0.22
1273	10	2.5	500	200	30.4	2.04	6.69	6.50	37.5	13	2345	0.51
1274	10	2.5	750	200	15.3	2.04	6.69	6.50	37.5	13	2345	0.27
1275	10	2.5	900	200	11.3	2.04	6.69	6.50	37.5	13	2345	0.22
1276	10	2.5	500	250	27.2	2.04	6.69	6.50	37.5	13	2345	0.49
1277	10	2.5	750	250	13.7	2.04	6.69	6.50	37.5	13	2345	0.28
1278	10	2.5	900	250	10.1	2.04	6.69	6.50	37.5	13	2345	0.18
1279	10	3	500	150	35.1	2.04	6.69	6.50	45	13	2345	0.44
1280	10	3	750	150	17.7	2.04	6.69	6.50	45	13	2345	0.23
1281	10	3	900	150	13.0	2.04	6.69	6.50	45	13	2345	0.18
1282	10	3	500	200	30.4	2.04	6.69	6.50	45	13	2345	0.4
1283	10	3	750	200	15.3	2.04	6.69	6.50	45	13	2345	0.19
1284	10	3	900	200	11.3	2.04	6.69	6.50	45	13	2345	0.13
1285	10	3	500	250	27.2	2.04	6.69	6.50	45	13	2345	0.38
1286	10	3	750	250	13.7	2.04	6.69	6.50	45	13	2345	0.17
1287	10	3	900	250	10.1	2.04	6.69	6.50	45	13	2345	0.14
1288	10	4.5	500	150	35.1	2.04	6.69	6.50	67.5	13	2345	0.3
1289	10	4.5	750	150	17.7	2.04	6.69	6.50	67.5	13	2345	0.15

1290	10	4.5	900	150	13.0	2.04	6.69	6.50	67.5	13	2345	0.12
1291	10	4.5	500	200	30.4	2.04	6.69	6.50	67.5	13	2345	0.24
1292	10	4.5	750	200	15.3	2.04	6.69	6.50	67.5	13	2345	0.13
1293	10	4.5	900	200	11.3	2.04	6.69	6.50	67.5	13	2345	0.12
1294	10	4.5	500	250	27.2	2.04	6.69	6.50	67.5	13	2345	0.22
1295	10	4.5	750	250	13.7	2.04	6.69	6.50	67.5	13	2345	0.13
1296	10	4.5	900	250	10.1	2.04	6.69	6.50	67.5	13	2345	0.11

[1] w is the width of the chain pillar
[2] h is the height of the chain pillar
[3] H is the depth of the cover
[4] Fl is the face length
[5] β is the abutment angle
[6] σ_C is the compressive strength of the coal seam
[7,8] E_F, E_R and E_C are the Young's modulus of the floor, immediate roof and coal seam
[9] H_C is the caving height
[10] E_{OB} is the Young's modulus of the overburden
[11] ρ_{OB} is the density of the overburden
[12] FoS is the factor of safety of the chain pillar

Annexure-VII

List of Publications

1. Yadav A, Behera B, Sahoo SK, Singh GSP, Sharma SK (2020a) An approach for numerical modelling of gob compaction process in longwall mining. Mining, Metallurgy & Exploration 37: 631–649. https://doi.org/10.1007/s42461-020-00182-0

2. Yadav A, Behera B, Sahoo SK, Singh GSP, Sharma SK (2020b) Numerical analysis of the gob stress distribution using a modified elastic model as the gob constitutive model. J. Inst. Eng. India Ser. D 101: 127–139. https://doi.org/10.1007/s40033-020-00214-5