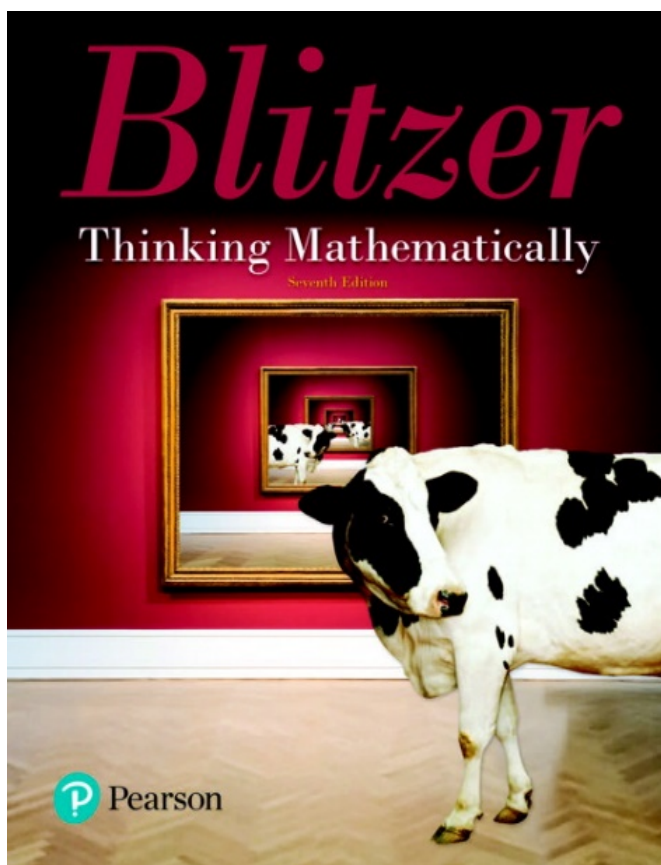


A Correlation of
Thinking Mathematically
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To the
Arizona Mathematics Standards
Quantitative Reasoning
2018

**A Correlation of Thinking Mathematically, 7th Edition, ©2019
To the Arizona Mathematics Standards Quantitative Reasoning**

Arizona Mathematics Standards Quantitative Reasoning	Thinking Mathematically 7th Edition, ©2019
Numerical Reasoning (NR)	
QR.NR.1: Represent quantities, using equivalent forms when appropriate, to investigate and describe quantitative and geometric relationships and solve problems in real-world contexts.	SE/TE: 252, 259, 267-270, 274-275, 309-311, 315-323, 324-326, 497-500, 501-502, 504-511, 512-513, 514-517, 518, 582-589, 590-591, 592-599, 600-601, 602-608, 609-611, 646-652, 653-656, 657-662, 663-665, 694-698, 699, 700-706, 707, 708-712, 713-715
QR.NR.2: Reason, model, and communicate with and about percentages (change, incorrect, deceptive, relative and absolute).	SE/TE: 21-22, 497-500, 501-502, 504-511, 512-513, 514-517, 518, 519-526, 527-528, 529-541, 542-544, 545-551, 552-553, 554-561, 562, 563-569, 570-571
QR.NR.3: Understand and compare magnitudes of numbers utilizing real-world context. Understand the importance and impact of unit selection.	SE/TE: 263-270, 315-323, 324-326, 582-589, 590-591, 592-599, 600-601, 602-608, 609-611, 646-652, 653-656, 657-662, 663-665
QR.NR.4: Use and justify estimation skills, and know why, how, and when to estimate results. Assess and justify the reasonableness of estimations using the context and comparisons to other known values.	SE/TE: 14-25, 26-29, 364, 420-421, 468-479, 480-483, 520-526, 527-528, 532-541, 542-544, 545-551, 552-553, 554-561, 565-569, 570-571, 585, 588-589, 590-591, 593-599, 600-601, 604-606, 608-611, 651-652, 668-671, 672-675
Covariational Reasoning (CR)	
QR.CR.1: Analyze and compare growth and decay using absolute and relative change utilizing real-world contexts.	SE/TE: 417-418, 420-421, 469-475, 514-517, 518, 519-526, 527-528, 529-541, 542-544, 545-551, 552-553, 554-561, 562, 563-569, 570-571
QR.CR.2: Compare, reason and communicate about proportional and non-proportional models utilizing real-world contexts.	SE/TE: 22-25, 26-29, 354, 360-361, 363-364, 367-368, 413-418, 420-421, 422-424, 468-479, 480-483
QR.CR.3: Identify, create, and use appropriate models for bivariate data sets (i.e. linear, exponential) to estimate solutions for contextual questions, identify patterns and identify how changing parameters affect the models.	SE/TE: 21-25, 26-29, 354, 360-361, 367-368, 417-418, 420-421, 468-479, 480-483, 828-834, 835-838

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Statistical and Probabilistic Reasoning (SPR)	
QR.SPR.1: Reason and communicate about the validity of claims based on empirical, theoretical, and subjective probabilities. Draw conclusions or make decisions related to risk, pay-off, expected value, and false negatives/positives in various probabilistic contexts. <i>Encompasses P.S-CP.B.9, P.S-MD.A.2, P.S-MD.A.3, P.S-MD.A.4, P.S-MD.B.5, P.S-MD.B.7</i>	SE/TE: 715-721, 722-723, 724-728, 729-730, 731-740, 741-743, 744-752, 753-755, 756-760, 761-763
QR.SPR.2: Analyze statistical information and identify limitations, strengths, or lack of information in studies including data collection methods (e.g. sampling, experimental, observational) and possible sources of bias. Identify errors or misuses of statistics to justify particular conclusions. <i>Encompasses P.S-IC.B.3</i>	SE/TE: 20-25, 26-29, 99-105, 107-109, 771-781, 782-785, 786-796, 797-799, 800-805, 806-807, 808-818, 819-821, 822-826, 827, 828-834, 835-838
QR.SPR.3: Represent numerical summaries and visual displays of real-world data to make informed decisions. Reason, communicate, and describe strengths, limitations, and fallacies of various displays. <i>Encompasses P.S-IC.B.6</i>	SE/TE: 18-25, 26-29, 99, 771-781, 782-785, 786-796, 797-799, 800-805, 806-807, 808-818, 819-821, 822-826, 827, 828-834, 835-838
QR.SPR.4: Represent center, shape, and spread of two or more data sets. Reason, communicate, and compare data sets in context.	SE/TE: 804-805, 807, 808-809, 829
Discrete Mathematical Reasoning (DMR)	
QR.DMR.1: Understand, analyze, and apply vertex-edge graphs to model and make informed decisions related to paths, circuits, networks, and relationships in real-world settings. <i>Encompasses P.CM-DM.A.1, P.CM-DM.A.2</i>	SE/TE: 898-905, 906-907, 908-915, 916-919, 920-926, 927-929, 930-935, 936-939
QR.DMR.2: Devise, analyze, and apply algorithms for solving vertex-edge graph problems. <i>P.CM-DM.A.3</i>	SE/TE: 910-915, 916-919, 920-926, 927-929, 930-935, 936-939
QR.DMR.3: Extend work with adjacency matrices for graphs, such as interpreting row sums and using the n th power of the adjacency matrix to count paths of length n in a graph. <i>P.CM-DM.A.4</i>	For related content, please see: SE/TE: 898-905, 906-907, 908-915, 916-919, 920-926, 927-929, 930-935, 936-939

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Financial Reasoning (FR)	
QR.FR.1: Identify and research a career goal. Develop a plan and time table for achieving it including educational/training requirements, costs, and other factors (e.g. cost versus savings, income and debt).	For related content, please see: SE/TE: 1, 503-511, 512-513, 529-541, 542-544, 554-561, 562, 563-569, 570-571
QR.FR.2: Understand and apply strategies to monitor income and expenses, plan for spending, implement a diversified investment strategy, and save for future goals.	SE/TE: 494-500, 501-502, 503-511, 512-513, 514-517, 518, 519-526, 527-528, 529-541, 542-544, 545-551, 552-553, 554-561, 562, 563-569, 570-571
QR.FR.3: Use models to solve and communicate about contextual financial questions such as credit card debt, installment savings, amortization schedules, mortgage and other loan scenarios.	SE/TE: 497-500, 501-502, 504-511, 512-513, 514-517, 518, 519-526, 527-528, 529-541, 542-544, 545-551, 552-553, 554-561, 562, 563-569, 570-571
QR.FR.4: Identify and explain personal and societal consequences of financial decisions.	SE/TE: 503-511, 512-513, 529-541, 542-544, 546-551, 552-553, 554-561, 562, 563-569, 570-571
Standards for Mathematical Practice	
P.MP.1 Make sense of problems and persevere in solving them.	SE/TE: 30-42, 96-98, 152-153, 274-275, 324-325, 367-368, 451-452, 609-610, 635-636, 698-699, 784- 785, 822-826, 880-882, 917-919
P.MP.2 Reason abstractly and quantitatively.	SE/TE: 2-13, 98, 175, 183, 231, 261, 367-368, 452, 514, 601, 656, 707-708, 785, 882, 919
P.MP.3 Construct viable arguments and critique the reasoning of others.	SE/TE: 184-198, 199-208, 13, 29, 72, 98, 110, 154, 223, 291, 380, 468, 529, 684-685, 800
P.MP.4 Model with mathematics.	SE/TE: 14-29, 73-86, 154-165, 199-208, 231-239, 309-311, 369-379, 462-467, 519-528, 666-675, 808- 821, 827-837, 869-882, 898-907, 920-929
P.MP.5 Use appropriate tools strategically.	SE/TE: 14-29, 73-86, 139-153, 184-198, 231-239, 309-311, 468-483, 236, 291, 320, 401, 472, 532, 705, 803

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P.MP.6 Attend to precision.	SE/TE: 14-18, 126-138, 176-183, 252-262, 315-325, 468-483, 503-513, 554-562, 602-610, 616-624, 637- 645, 731-743, 827-837, 846-857, 898-907
P.MP.7 Look for and make use of structure.	SE/TE: 2-13, 50-63, 87-98, 126-138, 216-223, 262- 275, 344-353, 438-452, 545-553, 563-571, 582-591, 676-684, 715-723, 808-821, 898-907
P.MP.8 Look for and express regularity in repeated reasoning.	SE/TE: 2-13, 87-98, 176-183, 231-239, 262-275, 315- 325, 354-368, 424-437, 519-528, 582-591, 637-645, 700-707, 786-799, 869-882, 930-938

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