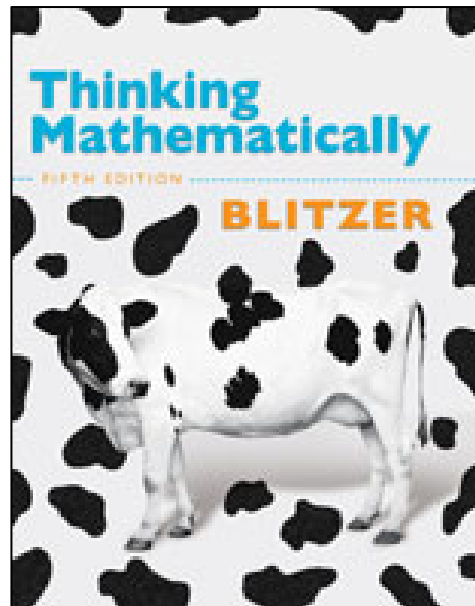


A Correlation of

Thinking Mathematically
Blitzer, 5th Edition
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to the

Arkansas
Topics in Discrete
Mathematics
Curriculum Framework

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Arkansas Topics in Discrete Mathematics Curriculum Framework	Thinking Mathematically Blitzer, 5 th Edition
Matrices	
Standard 1: Students will use matrices to analyze data to solve real-world problems.	
MA.1.TDM.1 Collect and interpret data in a matrix and perform operations to solve real-world problems, with and without technology	Supplement: 404–409, 411–413
MA.1.TDM.2 Solve real-world problems involving systems of linear equations using matrices (e.g., inverses, augmented, Cramer’s rule)	Supplement: 420
MA.1.TDM.3 Find and use the inverse of a matrix to solve real-world problems (e.g., cryptology)	Supplement: 414
MA.1.TDM.4 Organize and use <i>transition matrices</i> to solve probability problems that link present events to future events, with or without technology (e.g., consumer trends, polling trends, board games, weather trends)	Supplement: 407–410, 417

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Optimization	
Standard 2: Students will use various techniques to solve <i>optimization</i> problems.	
OP.2.TDM.1 Graph systems of linear inequalities with multiple <i>constraints</i> and identify vertices of the <i>feasible region</i>	SE/TE: 419–422, 442
OP.2.TDM.2 Model and solve real-world problems using <i>linear programming</i> (e.g., maximum profit/minimal cost, investments, agriculture, manufacturing, banking)	SE/TE: 419–422, 440, 442
OP.2.TDM.3 Interpret the meaning of the minimum or maximum value in terms of the <i>objective function</i>	SE/TE: 420
OP.2.TDM.4 Model and solve real-world problems involving <i>optimization</i> of area and volume	Related content: SE/TE: 419–422

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Measurement	
Standard 3: Students will apply various measurement techniques to solve real-world problems.	
ME.3.TDM.1 Solve problems using <i>dimensional analysis (factor-label method)</i> (e.g., construction, medical, metric, standard to metric, rate conversions)	SE/TE: 502–503, 508–511, 513, 515–517, 521–522, 525, 529, 569
ME.3.TDM.2 Use sine, cosine, and tangent ratios to determine lengths of sides and angle measures of right triangles for real-world problems (e.g., angles of elevation and depression and various distances)	SE/TE: 576–580, 582–583
ME.3.TDM.3 Use laws of sine and cosine to determine lengths of sides, measures of angles, and area of triangles for real-world problems (e.g., <i>Heron's formula</i>)	Related content, SE/TE: 561, 576, 577, 580.
ME.3.TDM.4 Calculate the area of two-dimensional <i>composite figures</i>	SE/TE: 565–566, 598
ME.3.TDM.5 Calculate the surface area and volume of three-dimensional <i>composite figures</i>	SE/TE: 574–575, 598

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Exponential Functions	
Standard 4: Students will extend algebraic skills to solve real-world problems involving exponential/logarithmic functions.	
EF.4.TDM.1 Draw and recognize the graphs of logarithmic and exponential functions, with and without appropriate technology	SE/TE: 423, 427, 433–435
EF.4.TDM.2 Apply properties of logarithms to convert and solve logarithmic (common and natural) and exponential equations	Related content: SE/TE: 282-284, 427
EF.4.TDM.3 Use the <i>change of base formula</i> to simplify and evaluate logarithmic expressions, using technology	This standard falls outside of the program scope.
EF.4.TDM.4 Recognize and apply properties of exponential functions to solve real-world problems (e.g., compound interest, amortization, annuities, appreciation, depreciation)	SE/TE: 424–425, 434
EF.4.TDM.5 Recognize and apply properties of logarithmic functions to solve real-world problems (e.g., Richter scale pH, decibel scale, bacterial growth, radioactive decay, Newton's Law of Cooling)	SE/TE: 428, 434–435

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Data Analysis	
Standard 5: Students will analyze data using various statistical tools.	
DA.5.TDM.1 Read, interpret, and analyze graphical representations of data used in various contexts (e.g., science reasoning, newspaper graphs)	SE/TE: 679–682, 684–685
DA.5.TDM.2 Identify <i>biases</i> that affect the <i>validity</i> of a data set	SE/TE: 675–676, 683
DA.5.TDM.3 Collect, analyze, and compare data sets using <i>five-number summary</i>	SE/TE: 687–696, 697–704, 705
DA.5.TDM.4 Investigate and analyze the characteristics of <i>normal</i> and <i>skewed distributions</i>	SE/TE: 707–714, 717, 720–725
DA.5.TDM.5 Determine and interpret the measures of spread of a data set (e.g., <i>standard deviation, range, percentiles, variance</i>)	SE/TE: 799–704, 705–706

Supp = A Survey of Mathematics with Applications (Angel) section on Matrices

TE = Teacher's Edition

SE = Student Edition