

2010 Mathematics Textbooks and Instructional Materials Committee Member Correlation to the 2009 Mathematics Standards of Learning and Curriculum Framework – Algebra, Functions, and Data Analysis

Text/Instructional Material Title: Text Algebra, Functions, and Data Analysis, A Virginia Course

Publisher: Pearson Education, Inc., publishing as Prentice Hall

Section I. Correlation with the Mathematics 2009 SOL and Curriculum Framework	Rating		
	Adequate	Limited	No Evidence
AFDA.1	X		
AFDA.2		X	
AFDA.3	X		
AFDA.4	X		
AFDA.5	X		
AFDA.6	X		
AFDA.7	X		
AFDA.8	X		

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Section II. Additional Criteria: Instructional Planning and Support	Rating		
	Adequate	Limited	No Evidence
1. Materials emphasize the use of effective instructional practices and learning theory.	X		
a. Students are guided through critical thinking and problem-solving approaches.	X		
b. Concepts are introduced through concrete experiences that use manipulatives and other technologies.		X	
c. Multiple opportunities are provided for students to develop and apply concepts through the use of calculators, computers, and other technologies.	X		
d. Students use the language of mathematics including specialized vocabulary and symbols.	X		
e. Students use a variety of representations (graphical, numerical, symbolic, verbal, and physical) to connect mathematical concepts.	X		
2. The mathematics content is significant and accurate.	X		
a. Materials are presented in an organized, logical manner which represents the current thinking on how students learn mathematics.	X		
b. Materials are organized appropriately within and among units of study.	X		
c. Format design includes titles, subheadings, and appropriate cross-referencing for ease of use.	X		
d. Writing style, length of sentences, vocabulary, graphics, and illustrations are appropriate.		X	
e. Level of abstraction is appropriate, and practical/real-life examples, including careers, are provided.	X		
f. Sufficient applications are provided to promote depth of application.	X		
3. Materials present content in an accurate, unbiased manner.	X		

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Mathematics Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
Please indicate the rating for each by placing an X in the appropriate cell.			
AFDA.1 The student will investigate and analyze function (linear, quadratic, exponential, and logarithmic) families and their characteristics. Key concepts include			
a) continuity;	X		
b) local and absolute maxima and minima;		X	
c) domain and range;	X		
d) zeros;		X	
e) intercepts;	X		
f) intervals in which the function is increasing/decreasing;	X		
g) end behaviors; and	X		
h) asymptotes.	X		
Comments: Provide comments to support “limited” or “no evidence” ratings.			

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AFDA.2 The student will use knowledge of transformations to write an equation, given the graph of a function (linear, quadratic, exponential, and logarithmic).		X	
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AFDA.3 The student will collect data and generate an equation for the curve (linear, quadratic, exponential, and logarithmic) of best fit to model real-world problems or applications. Students will use the best fit equation to interpolate function values, make decisions, and justify conclusions with algebraic and/or graphical models.	X		
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AFDA.4 The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.	X		
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	Adequate	Limited	No Evidence
AFDA.5 The student will determine optimal values in problem situations by identifying constraints and using linear programming techniques.	X		
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	Adequate	Limited	No Evidence
AFDA.6 The student will calculate probabilities. Key concepts include			
a) conditional probability;	X		
b) dependent and independent events;	X		
c) addition and multiplication rules;	X		
d) counting techniques (permutations and combinations); and	X		
e) Law of Large Numbers.	X		
Comments: Provide comments to support “limited” or “no evidence” ratings.			

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AFDA.7 The student will analyze the normal distribution. Key concepts include			
a) characteristics of normally distributed data;	X		
b) percentiles;	X		
c) normalizing data, using z-scores; and	X		
d) area under the standard normal curve and probability.	X		
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AFDA.8 The student will design and conduct an experiment/survey. Key concepts include			
a) sample size;		X	
b) sampling technique;	X		
c) controlling sources of bias and experimental error;	X		
d) data collection; and	X		
e) data analysis and reporting.	X		
Comments: Provide comments to support “limited” or “no evidence” ratings.			