

Santiago Canyon College, Spring 2012

Math 140, College Algebra

Kime, Linda, et al. *Explorations in College Algebra* 5th edition, 2011

Complete these problems *in addition to* the WileyPlus online homework problems.

- Complete all parts of the assigned problems unless otherwise indicated. For example, in Section 1.2 #2 has parts a, b, c, and d. You are to complete all four parts. #5 has parts a, b, c, and d. This assignment list indicates that you are to complete parts a and d.

### Ch. 1 An Introduction to Data and Functions

Section	Assignment
1.1 Describing Single-Variable Data	#1, 5, 7, 20
1.2 Describing Relationships between Two Variables	#1, 2, 3, 5 a d, 9, 10
1.3 An Introduction to Functions	#2, 3, 4, 5, 9
1.4 The Language of Functions	#3, 5, 9, 13
1.5 Visualizing Functions	#3, 5, 8, 9, 20

### Ch. 2 Rates of Change and Linear Functions

Section	Assignment
2.1 Average Rates of Change	#1, 5, 9, 13
2.2 Change in the Average Rate of Change	#1, 5, 7
2.3 The Average Rate of Change is a Slope	#1, 4, 9, 18, 19
2.4 Putting a Slant on Data	#1, 2, 5
2.5 Linear Functions: When Rates of Change are Constant	#1, 4, 9, 16, 17
2.6 Visualizing Linear Functions	#1, 5, 9
2.7 Constructing Graphs and Equations of Linear Functions	#3, 4, 6, 15, 19
2.8 Special Cases	#1, 5, 9, 10, 20
2.9 Breaking the Line: Piecewise Linear Functions	#1, 4, 7, 10
2.10 Constructing Linear Models of Data	#1, 5, 11, 17
2.11 Looking for Links between Education and Earnings: A Case Study Using Regression Lines	#1, 4, 7, 10

### Ch. 3 When Lines Meet: Linear Systems

Section	Assignment
3.1 Interpreting Intersection Points: Linear and Nonlinear Systems	#2, 5, 11, 13
3.2 Visualizing and Solving Linear Systems	#1, 3, 13, 19 & problems from the handout
3.3 Reading Between the Lines: Linear Inequalities	#1, 3, 13, 17
3.4 Systems with Piecewise Linear Functions: Tax Plans	#1, 4

### Ch. 4 The Laws of Exponents and Logarithms: Measuring the Universe

Section	Assignment
4.1 The Numbers of Science: Measuring Time and Space	#1-12

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4.2	Positive Integer Exponents	#3, 5, 9, 12, 13
4.3	Zero, Negative, and Fractional Exponents	#3, 5, 11, 17, 27, 28, 32
4.4	Converting Units	#5, 6, 9, 15, 21
4.5	Orders of Magnitude	#1, 5, 9
4.6	Logarithms as Numbers	#1, 5, 6, 13, 19

### Ch. 5 Growth and Decay: An Introduction to Exponential Functions

Section	Assignment	
5.1	Exponential Growth	#1, 5, 11, 13
5.2	Exponential Decay	#1, 3, 4, 11, 15
5.3	Comparing Linear and Exponential Functions	#1, 4, 9, 13
5.4	Visualizing Exponential Functions	#4, 7, 9, 15
5.5	Exponential Functions: A Constant Percent Change	#7, 8, 17, 23
5.6	More Examples of Exponential Growth and Decay	#7, 13, 21
5.7	Compound Interest and the Number $e$	#3, 7, 11, 15
5.8	Semi-Log Plots of Exponential Functions	#1, 3

### Ch. 6 Logarithmic Links: Logarithmic and Exponential Functions

Section	Assignment	
6.1	Using Logarithms to Solve Exponential Equations	#20, 25, 29
6.2	Using Natural Logarithms to Solve Exponential Equations Base $e$	#8, 9, 30, 35
6.3	Visualizing and Applying Logarithmic Functions	#3, 8, 9
6.4	Using Semi-Log Plots to Construct Exponential Models for Data	#1, 9, 11, 13

### Ch. 7 Power Functions

Section	Assignment	
7.1	The Tension Between Surface Area and Volume	#3, 5, 11, 13
7.2	Direct Proportionality: Power Functions with Positive Powers	#7, 11, 14, 17
7.3	Visualizing Positive Integer Power Functions	#1, 5, 10
7.4	Comparing Power and Exponential Functions	#2, 10, 11, 13
7.5	Inverse Proportionality: Power Functions with Negative Powers	#1, 9, 13
7.6	Visualizing Negative Integer Power Functions	#1, 5, 13, 16
7.7	Using Logarithmic Scales to Find the Best Functional Model	#5-7, 11, 15

### Ch. 8 Quadratics and the Mathematics of Motion

Section	Assignment	
8.1	An Introduction to Quadratic Functions: The Standard Form	#1, 13, 21, 22
8.2	Visualizing Quadratics: The Vertex Form	#1, 2, 7, 13, 15
8.3	The Standard Form vs. the Vertex Form	#1, 2, 13, 19
8.4	Finding the Horizontal Intercepts: The Factored Form	#13, 16-21

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8.5	The Average Rate of Change of a Quadratic Function	#2, 3, 11
8.6	The Mathematics of Motion	#3, 7

### Ch. 9 New Functions from Old

Section	Assignment	
9.1	Transformations	#3, 9, 20
9.2	The Algebra of Functions	#5, 11, 13, 17
9.3	Polynomials: The Sum of Power Functions	#1, 7, 19, 25
9.4	Rational Functions: The Quotient of Polynomials	#1, 11, 12, 20
9.5	Composition and Inverse Functions	#3, 7, 25, 27
9.6	Exploring, Extending, and Expanding	#9.6c, 9.6e

### Supplement: Sequences and Series

Section	Assignment	
10.1	Sequences: Explicit & Recursive	#1-18
10.2	Arithmetic Sequences	#1-19
10.3	Series	#1-14
10.4	Geometric Series	#1-13