

## **Review for Exam 1**

### **Section 1.1**

- Be able to use set notation.
- Know the how to recognize and identify natural numbers, whole numbers, integers, rational numbers, irrational numbers, and whole numbers.
- Be able to plot real numbers on the real number line and use it to order real numbers.
- Know how to find the distance between two real numbers.
- Practice Problems: #1, 3, 13-53 odds

### **Section 1.2**

- Be able to add, subtract, multiply, and divide rational numbers.
- Know how to use exponential notation.
- Be able to use the order of operations to evaluate expressions.
- Practice Problems: #21-31 odds, 69-123 odds

### **Section 1.3**

- Be able to use and identify the properties of real numbers (Commutative, associative, distributive, etc.).
- Practice Problems: #5-17 odds, 45-57 odds, 63, 65

### **Section 1.4**

- Be able to identify the terms and coefficients in an algebraic expression.
- Know how to simplify algebraic expressions (combining like terms, removing parentheses, etc.).
- Be able to evaluate algebraic expressions at a given value for a variable.
- Practice Problems: #1, 5, 11, 53-87 odds,

### **Section 1.5**

- Be able to translate phrases into algebraic expressions.
- Practice Problems: #1-23 odds, 59-63 odds

### **Section 2.1**

- Know how to check if a number is a solution to a linear equation.
- Be able to solve linear equations.
- Practice Problems: #1-5 odds, 21-57 odds

## Section 2.2

- Know how to use percentages to solve given problems
- Be able to use ratios to solve problems.
- Practice Problems: #13-33 odds, 43-51 odds

## Section 2.3

- Know how to use and find a discount, discount rate, selling price, and list price when given appropriate information.
- Be able to set up and solve equations involving rate, distance, and time.
- Practice Problems: #9-15 odds, 21, 23, 43-53 odds

## Section 2.4

- Be able to solve linear inequalities.
- Know how to sketch the solution to a linear inequality on the real number line.
- Practice Problems: #35-81 odds

## Section 2.5

- Know how to solve absolute value equations.
- Be able to solve absolute value inequalities and sketch the solution on the real number line.
- Practice Problems: #13-39 odds, 51-69 odds

## Section 3.6

- Know the difference between the domain and range, and know how to determine them for a given relation.
- Know how to determine if a relation is a function.
- Given an equation, be able to determine if  $y$  is a function of  $x$ .
- Be able to evaluate functions.
- Practice Problems: #1, 3, 11, 13, 15, 19, 21, 23, 29, 31, 39-42, 49-63 odds

## Section 3.1

- Be able to plot points on the rectangular coordinate system and determine the quadrant in which the point is located.
- Be able to determine if a point is a solution to an equation.
- Know how to calculate the distance between two points.
- Practice Problems: #1-11 odds, 55-59 odds, 69-77 odds

### **Section 3.2**

- Be able to graph functions of  $x$ .
- Be able to calculate  $x$ - and  $y$ -intercepts for a function, and use them to help graph a function.
- Practice Problems: #57-91 odds

### **Section 3.3**

- Be able to calculate the slope of a line when given two points on the line.
- Know how to sketch the graph of a line, and determine the slope and  $y$ -intercept from the equation.
- Given the equations of two lines, be able to determine if the lines are parallel, perpendicular, or neither.
- Practice Problems: #13-29 odds, 57-65 odds, 75-78

### **Section 3.4**

- Be able to use the point-slope form and/or the slope-intercept form to determine the equation of a line.
- Know how to write the equations of vertical and horizontal lines.
- Be able to use the fact that a line is parallel or perpendicular to a given line to determine the slope of the line.
- Practice Problems: #5-9 odds, 19-37 odds, 55-73 odds

### **Section 3.5**

- Be able to sketch the graph of a linear inequality in two variables.
- Practice Problems: #17-43 odds

### **Section 4.1**

- Know how to check if a point is a solution to a system of linear equations.
- Be able to find the solution to a system of linear equations by graphing.
- Be able to find a solution to a system of linear equations by using the method of substitution.
- Know how to recognize whether there is one solution, no solution, or infinitely many solutions to a system of linear equations.
- Practice Problems: #35-47 odds, 53-77 odds

### **Section 4.2**

- Be able to find a solution to a system of linear equations with two variables by using the method of elimination.
- Practice Problems: #13-47 odds

### **Section 4.3**

- Be able to find a solution to a system of linear equations with three variables by using the method of elimination combined with back-substitution.
- Practice Problems: #11-25 odds

### **Section 4.5**

- Be able to find the determinant of a 2x2 matrix.
- Know how to use Cramer's Rule to find a solution to a system of linear equations.
- Practice Problems: #1-11 odds, 37-46

### **Section 4.6**

- Be able to sketch the graph of the solution to a system of linear inequalities.
- Practice Problems: #11-43 odds