Algebra II - Chapter 1

1.1 – Apply Properties of Real Numbers

1) Graph on a number line: $- 3, \frac{5}{2}, 2, -\frac{9}{2}, 4$

2) Name the property

Property	Addition	Multiplication
Commutative		
Associative		
Identity		
Inverse		
Distributive		

$a \cdot \frac{1}{a} = 1$	$a + (-a) = 0$	$a(b + c) = ab + ac$	$a + 0 = a, \; 0 + a = 0$
$a + b = b + a$	$(ab)c = a(bc)$	$ab = ba$	$a \cdot 1 = a$

3) You travel 60 km in 1.5 hours. What is your average speed?

4) Convert
   a. 15 meters to millimeters

   b. 5 hours to minutes

   c. 6 ft/sec to miles per hour

1.2 – Evaluate & Simplify Algebraic Expressions

1) Evaluate the expressions:

    a. 6^3

    b. -2^6

    c. $(-2)^6$

    d. $5x(x-2)$, when $x = 6$

    e. $3y^2 - 4y$, when $y =- 2$

    f. $(z+3)^3$, when $z = 2$

    g. $16x + 11y$, when $x =- 2$ and $y =- 3$

2) Simplify:

    a. $y^2 + 2y + 3y^2$

    b. $p^3 + 3q^2 - q + 3p^3$

    c. $3(x^2 - y) + 9(x^2 + 2y)$

1.3 – Solving Linear Equations

Solve the equation and check your solution:

1) $-3 = w + 5$

2) $3 + \frac{8}{7}d = -1$

3) $5m - 2 = -m - 2$

4) $5d + 17 = 4(d + 3)$

5) $\frac{1}{5}d + \frac{1}{8}d = 2$

6) $6.5m + 1.5 = 4.3m - 0.7$

7) $3(x + 5) = 3x + 15$

1.4 – Rewrite Formulas and Equations:

Check out the chart on page 26

Solve the equation for y. Then find the value of y for the x.

1) $9y - 4x = -30; x = 8$

2) $9y + 6xy = 30; x = -6$

3) $4x + 7y + 5xy = 0; x = 1$

4) $\frac{1}{x} + \frac{1}{y} = 1 \; for \; y$

1.5 – Use Problem Solving Strategies and Models

1) Use the formula $P = 2l + 2w$ to solve for the missing variable: $P = 46in, \; l = ?, \; w = 4in$

2) Look at the pattern and write an equation to represent the table:

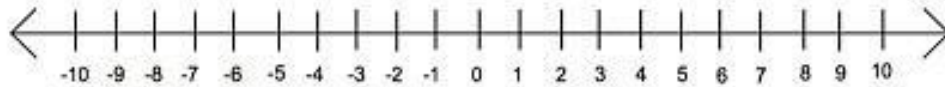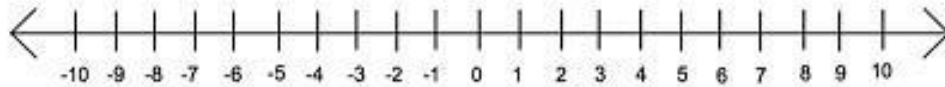| x	0	1	2	3
y	57	107	157	207

3) Page 37, #18

1.6 – Solve Linear Inequalities

Key concept chart – Page 42

Main point – if you have to multiply or divide by a negative number, FLIP the inequality!!!

1) Graph $x \leq 2.5$
2) Graph $5 \leq x < 10$
3) Graph $x \leq -1 \ or \ x > 1$
4) Solve and then graph the solution: $18 + 2x \leq 9x + 4$

Name: _____
Class: _____
Date: _____
Assignment: _____

1.7 – Solve Absolute Value Equations and Inequalities

Solve Absolute Value Equation

$$|5 - 2x| - 11 = 0$$

$$|5 - 2x| = 11 \qquad \text{Isolate the absolute value}$$

Split the equation up into two separate equations

$5 - 2x = 11$	$5 - 2x = -11$
$-2x = 6$	$-2x = -16$
$x = -3$	$x = 8$

Solve each of the equations

1) Decide if the given numbers are solutions: $|d + 6| = 10; \quad -4, \quad -16$

2) Solve the equation and graph the solution: $|m + 5| = 1$

3) Solve the equation: $|6 - 3k| = 21$

4) Solve the equation. Check for extraneous solutions: $|8x - 1| = 6x$