**Unit 7 Study Guide** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 1 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_

**Directions:** Complete each of the following on a separate sheet of paper! Solutions can be found on the wiki page (russellakmath.weebly.com)

**ADDING AND SUBTRACTING POLYNOMIALS**

Find each sum or difference.

1. (4a - 5) + (3a + 6)
2. (3p2 - 2p + 3) - (p2 - 7p + 7)
3. (7x2 - 8) + (3x2 + 1)
4. (x2 + y2) - (-x2 + y2)
5. (5x2 - x - 7) + (2x2 + 3x + 4)
6. (5a + 9b) - (4b + 2a)
7. (5x + 3z) + 9z
8. 6p - (8q + 5p)
9. (5a2x + 3ax2 - 5x) + (2a2x - 5ax2 + 7x)
10. (x3 - 3x2y + 4xy2 + y3) - (7x3 -9x2y + xy2 + y3)

Find the measure of the third side of each triangle. P is the measure of the perimeter.

1. P = 3x + 3y
2. P = 9b2 – 2ab + 12a2

9ab + 8a2

7b2 – 2ab

4a2 – 4ab

???

x + y

x + y

**MULTIPLYING POLYNOMIALS**

Multiply each of the following.

1. 4x(2x + 6)
2. 9y2(5y – 3)
3. -6a(3a2 – 7a – 11)
4. 3z3(12z + 4z3 – 1)
5. 2pq(3p2 + 6pq + 7q2)
6. -5xy3( -3x3 + 7y – 2xy)
7. (3x + 2)(x + 4)
8. (2x + 5y)(7y – 3x)
9. (8r2 – 2r)(5r + 4)
10. (2n -7)(3n + 3)
11. (4x + 9)(2x2  – 5x + 3)
12. (3x + 5)2

**FACTORING POLYNOMAILS**

FACTOR BY USING THE GCF

1. 1. 24x + 48y
2. 30mn2 + m2n – 6n
3. 45x4y2 + 15xy2
4. a2b + a

*FACTOR TRINOMIALS – x2 + bx + c (X-Factor)*

1. g2 – 2g – 63
2. y2 + 4y – 60
3. x2 – 11x + 30
4. m2 – m – 56

FACTOR TRINOMIALS – ax2 + bx + c (Slip and Slide)

1. 2a2 + 5a + 3
2. 18x2 – 27x – 5
3. 3x2 + 2x – 8
4. 10x2 – 19x – 15

FACTOR (ALL MIXED UP)

1. 4x2 + 4x – 3
2. 16a3b4 – 6a2
3. 12xq2 + 34xq – 28x
4. 3a2 + 30a + 63

**AREA – FACTORING APPLICATION**

1. The area of a rectangle is g2 + 3g – 10, find the dimensions of the rectangle.
2. The area of a square is m2 + 10m + 25. Find the length of each side.
3. Find the perimeter of the square in question #2.
4. The volume of a rectangular prism is 8m3 – 128m. Find the length of all three sides. How many sides are binomials?
5. The area of a rectangle is 10w2 – 19w – 15. If one of the sides is (2w – 5), what is the length of the other side?
6. Is it possible for a rectangle to have an area of 2y2 + 11y + 18, if the side lengths are binomials?
7. The area of a rectangular book cover is 4x2 – 6x – 40. The width of the book cover is 2x – 8, what is the length of the cover?