

Unit 7 Study Guide

Math 1

Name: _____

Date: _____ Block: _____

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

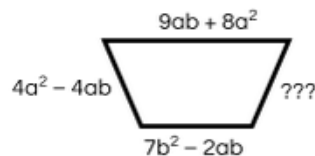
ADDING AND SUBTRACTING POLYNOMIALS

Find each sum or difference.

- $(4a - 5) + (3a + 6)$
- $(3p^2 - 2p + 3) - (p^2 - 7p + 7)$
- $(7x^2 - 8) + (3x^2 + 1)$
- $(x^2 + y^2) - (-x^2 + y^2)$
- $(5x^2 - x - 7) + (2x^2 + 3x + 4)$
- $(5a + 9b) - (4b + 2a)$
- $(5x + 3z) + 9z$
- $6p - (8q + 5p)$
- $(5a^2x + 3ax^2 - 5x) + (2a^2x - 5ax^2 + 7x)$
- $(x^3 - 3x^2y + 4xy^2 + y^3) - (7x^3 - 9x^2y + xy^2 + y^3)$

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

- $P = 3x + 3y$
- $P = 9b^2 - 2ab + 12a^2$



MULTIPLYING POLYNOMIALS

Multiply each of the following.

- $4x(2x + 6)$
- $9y^2(5y - 3)$
- $-6a(3a^2 - 7a - 11)$
- $3z^3(12z + 4z^3 - 1)$
- $2pq(3p^2 + 6pq + 7q^2)$
- $-5xy^3(-3x^3 + 7y - 2xy)$
- $(3x + 2)(x + 4)$
- $(2x + 5y)(7y - 3x)$
- $(8r^2 - 2r)(5r + 4)$
- $(2n - 7)(3n + 3)$
- $(4x + 9)(2x^2 - 5x + 3)$
- $(3x + 5)^2$

FACTORING POLYNOMIALS

FACTOR BY USING THE GCF

1. $24x + 48y$
2. $30mn^2 + m^2n - 6n$
3. $45x^4y^2 + 15xy^2$
4. $a^2b + a$

FACTOR TRINOMIALS – $x^2 + bx + c$ (X-Factor)

5. $g^2 - 2g - 63$
6. $y^2 + 4y - 60$
7. $x^2 - 11x + 30$
8. $m^2 - m - 56$

FACTOR TRINOMIALS – $ax^2 + bx + c$ (Slip and Slide)

9. $2a^2 + 5a + 3$
10. $18x^2 - 27x - 5$
11. $3x^2 + 2x - 8$
12. $10x^2 - 19x - 15$

FACTOR (ALL MIXED UP)

13. $4x^2 + 4x - 3$
14. $16a^3b^4 - 6a^2$
15. $12xq^2 + 34xq - 28x$
16. $3a^2 + 30a + 63$

AREA – FACTORING APPLICATION

1. The area of a rectangle is $g^2 + 3g - 10$, find the dimensions of the rectangle.
2. The area of a square is $m^2 + 10m + 25$. Find the length of each side.
3. Find the perimeter of the square in question #2.
4. The volume of a rectangular prism is $8m^3 - 128m$. Find the length of all three sides. How many sides are binomials?
5. The area of a rectangle is $10w^2 - 19w - 15$. 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 $2y^2 + 11y + 18$, if the side lengths are binomials?
7. The area of a rectangular book cover is $4x^2 - 6x - 40$. The width of the book cover is $2x - 8$, what is the length of the cover?