Geometry Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Factoring by GCF Date: \_\_\_\_\_\_\_\_\_\_\_\_

**Greatest Common Factor (GCF)**

1. 3 9 12 \_\_\_\_\_\_\_\_\_\_ 2. 8 12 20 \_\_\_\_\_\_\_\_\_\_ 3. 28 49 \_\_\_\_\_\_\_\_\_\_

4. x x2 \_\_\_\_\_\_\_\_\_\_ 5. x3 x2 x7 \_\_\_\_\_\_\_\_\_\_ 6. 6x2 8x 14x3 \_\_\_\_\_\_\_\_\_\_

**Factoring Polynomials**

The GCF for a polynomial is the largest monomial that divides (is a factor of) into each term of the polynomial.

Ex: What is the GCF? **4x2** – **16x** Answer:

**Factor the following polynomials by removing the GCF.**

1. 15x + 9xy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. 12a2b – 3a2b3 + 18a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

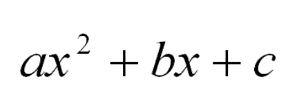
3. -8xy3 + 20x2y2z – 4x \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. 32m4n + 24mn2 – 16mn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Factor each. If it will not factor (does not have a GCF), write PRIME.**

1. 3x – 5x2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. 4ab + 5ba2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. 8z2 + 21r2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. 4m2 + 6m – 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Factoring Trinomials (a = 1) Date: \_\_\_\_\_\_\_\_\_\_\_\_

A **TRINOMIAL** is a polynomial with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ terms. We will use "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_" to factor trinomials.

1. x2 + 8x + 12 2. x2 – 5x + 6

3. x2 – 2x – 8 4. x2 + 3x – 18

5. x2 – x – 42 6. x2 + x – 42

Try these by yourself!

7. x2 + 8x + 15 8. x2 + 6x + 5

9. x2 + 5x – 36 10. x2 – 9x + 8

11. x2 + 13x + 36 12. x2 – 23x + 60

13. x2 + 3x – 18 14. w2 + 22w + 40

15. y2 – 2y – 80 16. y2 – 12y + 36

Geometry Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Factoring Trinomials (a > 1) Date: \_\_\_\_\_\_\_\_\_\_\_\_

1. 2*w*2 - 11*w* + 15 2. 3*t*2 – 13*t* – 10

3. 8*x*2 + 5*x* – 3 4. 6*p*2 – 49*p* + 8

5. 5x2 – 17x – 12 6. 3x2 – 5x – 2

7. 4x2 – 8x – 5 8. 9x2 – 9x – 4

9. 3x2 – 11x – 4 10. 5x2 + 21x + 4

Geometry Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Putting It All Together Date: \_\_\_\_\_\_\_\_\_\_\_\_

GREATEST COMMON FACTOR

1. -35x4 + 49x 2. 6x2 + 18x4

3. 18x5 – 18x2 – 48 4. 25x4y + 20x3y – 40x3

FACTORING TRINOMIALS: a = 1

5. x2 + 5x - 36 6. x2 + 7x + 10

7. n2 – n – 2 8. x2 – 11x + 28

FACTORING POLYNOMIALS: a > 1

9. 5x2 + 24x – 5 10. 2x2 + 7x – 4

11. 2x2 – x – 3 12. 3x2 – 11x – 20

PUTTING IT ALL TOGETHER: some of these you may have to take out a GCF and then factor the remaining polynomial!

13. 6n2 – 6n + 12 14. 5v4 + 3v7

15. 5x2 + 35x – 150 16. 70x4y4 + 40x4y3 – 40x3y3

17. 8x2 - 10x – 25 18. 2x2 + 11x + 5