

NOTES: FACTORING GCF

NAME: _____

WHAT IS THE GREATEST COMMON FACTOR:

1. 6 and 8

2. 5 and 30

3. 12 and 6 and 9

4. 4 and 8 and 10

FACTOR OUT THE GCF:

5. $3x^2 - 27$

6. $2x^2 + 8x + 8$

PRACTICE: Factor out the GCF

7. $6a + 20$	8. $24x^2 + 18$
9. $x^2 - 36x$	10. $2x^2 + 24x$
11. $2x^2 + 10x + 6$	12. $6x^2 + 6x - 18$

FACTORIZING BINOMIALS

Textbook Chapter 4.3

1. Binomial Conjugates: $(A + B)(A - B) \leftarrow$ Same binomial except addition/subtraction signs

Recall, $(x + 5)(x - 5) =$

Ex 1:

Ex 2:

PRACTICE!

$$a^2 - b^2 : (a + b)(a - b)$$

Examples:

$$x^2 - 25 =$$

$$16x^2 - 9 =$$

$$49x^2 - 121 =$$

$$100a^2 - 81b^2 =$$

Formula:

2. PRIME BINOMIALS: _____

a) $121x^2 + 64 =$

c) $4x^2 - 1 =$

b) $121x^2 - 64 =$

d) $4x^2 + 1 =$

BINOMIAL GCF

a) $8x^2 - 98$

b) $x^2 - 25x$

c) $x^2 - x$

d) $50x^2 - 2$

FACTORIZING TRINOMIALS

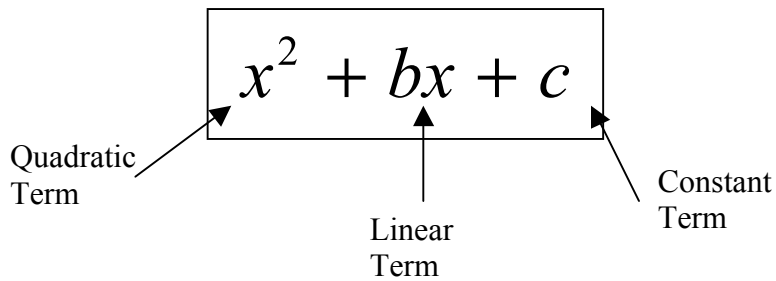
Name: _____

Date: _____

I. **Trinomials of the Form:** _____ (not perfect square trinomials).

Recall () (),

Factoring “Easy” Trinomials



“Easy” Trinomials: The Leading Coefficient is _____.

Method

1. Write down two pairs of parentheses.
2. Determine the factors of C.
3. Find the combination of factors that will add/subtract to equal B.
4. Place the values into the parentheses
5. Check using FOIL.

Factoring Trinomials (A=1)

Name: _____

Date: _____

Factor each trinomial (rewrite as a product of two binomials).

1. $x^2 + 6x + 5$
()()

4. $x^2 - 8x + 7$
()()

2. $x^2 + 4x + 3$
()()

5. $x^2 - 24x + 23$
()()

3. $x^2 + 12x + 11$
()()

6. $x^2 - 12x + 11$
()()

7. $x^2 - 2x - 3$
()()

10. $x^2 + 2x - 3$
()()

8. $x^2 - 12x - 13$
()()

11. $x^2 + 12x - 13$
()()

9. $x^2 - 6x - 7$
()()

12. $x^2 + 6x - 7$
()()

General Form is $Ax^2 + Bx + C$.

On this page, C is _____.

Factor each trinomial (rewrite as a product of two binomials).

General Form is $Ax^2 + Bx + C$.

On this page, C is _____.

1. $x^2 + 5x + 6$

()()

2. $x^2 + 6x + 8$

()()

3. $x^2 - 11x + 10$

()()

4. $x^2 - 7x + 12$

()()

5. $x^2 + x - 20$

()()

7. $x^2 - 3x - 18$

()()

6. $x^2 + 6x - 16$

()()

8. $x^2 - 10x - 24$

()()

COMBINATION FACTORING

Always check for common monomials FIRST! (GCF stuff)

You try:

1. $5x^2 - 45$	2. $2x^2 + 200$
3. $x^2 + 9x$	4. $24p^2 - 16p$
5. $2m^2 + 24m - 26$	6. $3w^2 - 30w + 75$

FACTORING BINOMIALS PRACTICE!

Name: _____

1. Factor out the GCF first =)
2. DOTS: $A^2 - B^2 = (A + B)(A - B)$
3. $A^2 + B^2 = \text{PRIME}$

Factor using DOTS. If prime, write "Prime."

1. $x^2 - 49$	2. $16x^2 + 25$
3. $81x^2 - 16$	4. $4x^2 - 1$
5. $x^2 + 100$	6. $9x^2 - 25y^2$

Factor out the GCF.

7. $15x^2 + 10$	8. $4a + 18$
9. $x^2 - 100x$	10. $2x^2 - 24x$

Factor all binomials completely. If prime, write "Prime."

11. $4x^2 - 9$	12. $x^2 + 36$
13. $12x + 16$	14. $25x^2 - 64$
15. $2x^2 - 18$	16. $20x^2 + 10x$
17. $9x^2 - y^2$	18. $x^2 - x$

FACTORING TRINOMIALS!

1. Factor out the GCF first!
2. If $A = 1$, factor using the short method.
3. If $A \neq 1$, factor using grouping.

Factor the trinomial when $A = 1$.

1. $x^2 + 4x + 3$	2. $x^2 + x - 42$
3. $x^2 - 13x - 30$	4. $x^2 + 6x - 40$

Factor the trinomial when $A \neq 1$.

5. $5x^2 - 10x - 3x + 6$	6. $3x^2 - 21x - x + 7$
7. $2x^2 - 8x + 5x - 20$	8. $3x^2 + 3x - 36$
9. $4x^2 - 20x + 6x - 30$	10. $18x^2 + 12x - 6x - 4$

HOMWORK: FACTORING

Name: _____

Date: _____

Factor each expression completely. Complete as many problems as you can in the time given. Each question is marked either correct or incorrect.

Factor out the GCF.

1. $15x^2 + 10$	2. $4a + 18$
3. $x^2 - 100x$	4. $2x^2 - 24x$

Factor using DOTS. If prime, write "Prime."

5. $x^2 - 49$	6. $16x^2 + 25$
7. $81x^2 - 16$	8. $4x^2 - 1$
9. $x^2 + 100$	10. $9x^2 - 25y^2$

Factor the trinomial when $A = 1$.

11. $x^2 + 4x + 3$

12. $x^2 + x - 42$

13. $2x^2 - 2x - 24$

Factor the trinomial when $A \neq 1$.

14. $2x^2 - 10x + 3x - 15$

15. $9x^2 + 6x - 3x - 2$