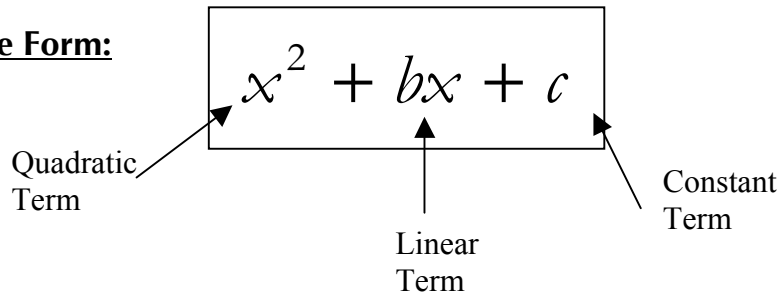# NOTES: FACTORING "EASY" TRINOMIALS   DAY 1
Textbook Chapter 4.3

OBJECTIVE: Today you will learn about how to factor trinomials!

Trinomials of the Form:

$$x^2 + bx + c$$

Quadratic
Term

Linear
Term

Constant
Term

        Recall (   ) (   ),

    "Easy" Trinomials: The Leading Coefficient is _____.

FACTOR "EASY" TRINOMIALS	FACTOR OUT THE GCF
1. $x^2 - 10x - 24$ ( )( )	2. $3x^2 + 9x$
3. $x^2 + 7x - 60$ ( )( )	4. $4x^2 - 24x$

5.   **FACTOR WITH 2 VARIABLES**: $x^2 + 5xy + 4y^2 = ($ $) ($ $)$

<u>**SPECIAL CASE: Perfect Square Trinomials**</u>: $(A + B)^2$ and $(A – B)^2$

Recall, $(x + 10)^2 =$ Recall, $(x – 3)^2 =$

Formula: $A^2 + 2AB + B^2 = (A + B)^2$

Formula: $A^2 – 2AB + B^2 = (A – B)^2$

Factor the perfect square trinomials!

1. $x^2 – 16x + 64$	2. $x^2 + 10x + 25 =$
3. $x^2 + 24x + 144$	4. $4x^2 – 28x + 49$

<u>NOTES: FACTOR A DIFFERENCE OF PERFECT SQUARES</u>
Textbook Chapter 4.3

<u>**Binomial Conjugates**</u>: $(A + B) (A – B)$ ← Same binomial except addition/subtraction signs

Recall, $(x + 5) (x – 5) =$

Ex 1:

Ex 2:

Formula:

PRACTICE!
$a^2 – b^2$: $(a + b)(a – b)$
Examples: $x^2 – 25 =$
$16x^2 – 9 =$
$49x^2 – 121 =$
$x^2 + 100 =$
$8x^2 – 98 =$

PRACTICE: FACTORING   DAY 1

Factor. If not factorable, write **<u>PRIME</u>**. Remember: **<u>put it in the correct order</u>** and **<u>factor out the GCF</u>**!

1. $x^2 - 49$

2. $81 - x^2$

3. $x^2 - 121$

4. $100a^2 - 81b^2$

5. $b^2 + 64$

6. $20x^2 - 45y^2$

7. $x^2 - 10x$

8. $6a^2 - 14a$

Factor. If not factorable, write **<u>PRIME</u>**. Remember: **<u>put it in the correct order</u>** and **<u>factor out the GCF</u>**!

9. $m^2 - 7m - 30$

10. $32 + 12n + n^2$

11. $y^2 + 36 + 12y$

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

13. $x^2 - 8x + 64$

14. $x^2 + 13x + 7$

Factor. If not factorable, write **PRIME**. Remember: **put it in the correct order** and **factor out the GCF**!

15. $x^2 - 12x + 20$

16. $x^2 - 16x + 48$

17. $x^2 - x - 42$

18. $x^2 - 2xy + y^2$

19. $x^4 + 7x^2 - 18$

20. $2t^3 - 36t^2 + 162t$

Factor. If not factorable, write **PRIME**. Remember: **put it in the correct order** and **factor out the GCF**!

21. $x^2 - 20x + 100$

22. $x^2 + 24x + 144$

23. $4x^2 + 28x + 49$

24. $9x^2 - 30x + 25$

25. $3x^2 - 30x + 75$

26. $2x^2 - 12x - 18$

Skills Review 4: Factoring

NAME: _____   **DUE:** _____

1. $25x^2 - 81$	2. $9x^2 - 1$
3. $2v^2 - 50$	4. $2v^2 - 50v$
5. $x^2 - y^2$	6. $x^2 + 16y^2$
7. $w^2 - 3w - 10$	8. $17m + m^2 - 18$
9. $x^2 - 3x - 10$	10. $x^2 - 9x + 18$

11. $x^2 + 12x + 32$	12. $2x^2 - 14x + 30$
13. $16x^2 - 40x + 25$	14. $3x^2 + 18x + 27$
15. $242p^2 - 162$	16. $a^2 + 2ab + b^2$

ANSWERS =)

1. $(5x - 9)(5x + 9)$ 9. $(x + 4)(x - 7)$
2. $(3x - 1)(3x + 1)$ 10. $(x - 3)(x - 6)$
3. $2(v - 5)(v + 5)$ 11. $(x + 4)(x + 8)$
4. $2v(v - 25)$ 12. $2(x^2 - 7x + 15)$
5. $(x - y)(x + y)$ 13. $(4x - 5)^2$
6.   PRIME!   14. $3(x + 3)^2$
7. $(w + 2)(w - 5)$ 15. $2(11p - 9)(11p + 9)$
8. $(m - 1)(m + 18)$ 16. $(a + b)^2$