Name: **Course/Section:** **Instructor:**

Chapter 13 Factoring Polynomials and Solving Equations

13.2 Factoring Trinomials I $(x^2 + bx + c)$

Review of the FOIL Method ~ Factoring Trinomials with Leading Coefficient 1

STUDY PLAN

Read: Read Section 13.2 on pages 806-811 in your textbook or eText.

Practice: Do your assigned exercises in your ☐ Book ☐ MyMathLab ☐ Worksheets

Review: Keep your corrected assignments in an organized notebook and use them to review for the test.

Key Terms

Exercises 1-2: Use the vocabulary terms listed below to complete each statement. Note that some terms or expressions may not be used.

standard form
prime polynomial
leading coefficient

1. Any trinomial of degree 2 in the variable x can be written in _____ as $ax^2 + bx + c$, where a, b, and c are constants. The constant a is called the _____.

2. A polynomial with integer coefficients that cannot be factored by using integer coefficients is called a(n) _____.

Factoring Trinomials with Leading Coefficient 1

Exercises 1-16: Refer to Examples 1-7 on pages 807-811 in your text and the Section 13.2 lecture video.

For each of the following, find an integer pair that has the given product and sum.

1. Product: 28; Sum: 11 **1.** _____

2. Product: -40; Sum: -3 **2.** _____

Factor each trinomial.

3. $x^2+7x+10$ **3.** _____

4. $x^2+9x+18$ **4.** _____

5. $y^2+13y+42$ **5.** _____

6. $b^2-10b+21$ **6.** _____

7. $x^2-8x+12$ **7.** _____

8. y^2-y-20 **8.** _____

9. $t^2 - 3t - 40$ **9.** _____

10. $x^2 + 2x - 24$ **10.** _____

11. $x^2 - 7x + 12$ **11.** _____

Factor each trinomial, if possible.

12. $x^2 - 9x + 22$ **12.** _____

13. $x^2 - 5x - 14$ **13.** _____

Factor each trinomial completely.

14. $5x^2 + 30x + 40$ **14.** _____

15. $2x^4 + 10x^3 - 12x^2$ **15.** _____

16. Find one possibility for the dimensions of a rectangle that has an area of $x^2 + 3x - 10$. **16.** _____

Factor each polynomial.

17. $3x^3 - 6x^2 + 4x - 8$ 17. _____

18. $4x - 4y + ax - ay$ 18. _____

19. $5x^3 - 15x^2 - x + 3$ 19. _____

20. $2z^3 + 12z^2 - 3z - 18$ 20. _____

Completely factor each polynomial.

21. $8x^3 - 12x^2 + 8x - 12$ 21. _____

22. $4x^5 + 6x^4 - 10x^3 - 15x^2$ 22. _____

Difference of Two Squares

Exercises ***Refer to Example 1 on page 822 in your text and the Section 13.4 lecture video.***

Factor each difference of two squares.

23. $x^2 - 16$ 23. _____

24. $25x^2 - 4$ 24. _____

25. $81 - 25a^2$ 25. _____

26. $9x^2 - 100y^2$ 26. _____

Perfect Square Trinomials

Exercises ***Refer to Example 2 on pages 823-824 in your text and the Section 13.4 lecture video.***

If possible, factor each trinomial as a perfect square trinomial.

27. $x^2 + 12x + 36$ 27. _____

28. $9t^2 + 6t + 1$ 28. _____

29. $25x^2 - 40x + 16$ 29. _____

30. $x^2 - 14xy + 49y^2$ 30. _____