

**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. \_\_\_\_\_