

**Section P.4 Factoring**

**Objective:** In this lesson you learned how to factor polynomials.

Course Number

Instructor

Date

**Important Vocabulary**

Define each term or concept.

**Factoring****I. Polynomials with Common Factors** (Page 34)

If a polynomial cannot be factored using integer coefficients, then it is \_\_\_\_\_ or \_\_\_\_\_.

The simplest type of factoring involves a polynomial that can be written as the product of a monomial and another polynomial.

The technique used here is the Distributive Property in reverse:

$$ab + ac = \underline{\hspace{2cm}}$$

**Example 1:** Factor  $3w^3 - 12w^2 + 15w$ .

***What you should learn***

How to remove common factors from polynomials

**II. Factoring Special Polynomial Forms** (Pages 35–36)

Complete each of the special factoring forms below.

**Difference of Two Squares**

$$u^2 - v^2 \underline{\hspace{2cm}}$$

**Perfect Square Trinomial**

$$u^2 + 2uv + v^2 \underline{\hspace{2cm}}$$

$$u^2 - 2uv + v^2 \underline{\hspace{2cm}}$$

**Sum of Difference of Two Cubes**

$$u^3 + v^3 \underline{\hspace{2cm}}$$

$$u^3 - v^3 \underline{\hspace{2cm}}$$

To recognize perfect square terms, . . .

To recognize a perfect square trinomial, note that . . .

***What you should learn***

How to factor special polynomial forms

**Example 2:** Factor:

(a)  $64 - 25y^2$

(b)  $9x^2 + 12xy + 4y^2$

### III. Trinomials with Binomial Factors (Page 37)

To factor a trinomial of the form  $ax^2 + bx + c =$

$(\square x + \square)(\square x + \square)$ , the goal is to . . .

***What you should learn***

How to factor trinomials as the product of two binomials

**Example 3:** Explain how to factor  $x^2 + 3x - 18$ .

### IV. Factoring by Grouping (Page 38)

To factor a polynomial with more than three terms by the grouping method, . . .

***What you should learn***

How to factor by grouping

List four guidelines for factoring polynomials:

- 1)
- 2)
- 3)
- 4)

**Homework Assignment**

Page(s)

Exercises