

**Section 4.3 Partial Fractions**

**Objective:** In this lesson you learned how to recognize and find partial fraction decompositions of rational expressions.

Course Number

Instructor

Date

**Important Vocabulary**

Define each term or concept.

**Partial fraction****Partial fraction decomposition****I. Introduction** (Page 342)

Suppose the rational expression  $N(x)/D(x)$  is an improper fraction. Before the expression can be decomposed into partial fractions, you must . . .

***What you should learn***  
How to recognize partial fraction decompositions of rational expressions

To decompose a proper rational expression into partial fractions, completely factor the denominator into factors of the form \_\_\_\_\_ and \_\_\_\_\_, where \_\_\_\_\_ is irreducible.

Describe how to deal with both linear factors and quadratic factors in the next step of a partial fraction decomposition.

**II. Partial Fraction Decomposition** (Pages 343–347)

To find the **basic equation** of a partial fraction decomposition, . . .

*What you should learn*  
How to find partial fraction decompositions of rational expressions

After finding the basic equation, the next step is . . .

To check a partial fraction decomposition, . . .

**Example 1:** Write the form of the partial fraction decomposition for  $\frac{x-4}{x^2-8x+12}$ .

**Example 2:** Write the form of the partial fraction decomposition for  $\frac{2x+1}{x^3-3x^2+x-3}$ .

**Example 3:** Solve the basic equation  $5x+3 = A(x-1) + B(x+3)$  for  $A$  and  $B$ .

**Homework Assignment**

Page(s)

Exercises