1 Identify Factors

Example 1  List the factors of each expression.

a. $8a^4$  

b. $4x^2y^3$

2 Determine the GCF of Two or More Numbers

Example 2

a. Write 76 as the product of prime numbers.

b. Determine the GCF of 42 and 60  

c. Determine the GCF of 64 and 80

3 Determine the GCF of Two or More Terms

1. Determine the GCF of the numbers.
2. For each variable find the lowest exponent among all the terms.

Example 3  Determine the GCF of the terms.

a. $m^2n^4, mn^3, mn^8$  

b. $6x^2y, 12x^3y^2, 3xy^4$

c. $-18a^3b^2, 24a^2b^3, 30a^3b$  

d. $4a+7b, 6(4a+7b)$

e. $(2x+3)(x+5), (2x+3)(x+9)$  

f. $(x-2)^3, 3(x-2)^2$
4 Factor a Monomial from a Polynomial

1. Determine the GCF of all terms in the polynomial.
2. Divide each term by the GCF.

Example 4 Factor. Check by multiplying.

a. \(3c + 9\)  
b. \(12h^3 + 15h^4\) 

c. \(14x^2 + 35x - 7\)  
d. \(2x^2y - 20xy^3 + 6y^2\) 

e. \(x(5x + 1) - 3(5x + 1)\)  
f. \(3x(x - 2) + (x - 2)\)