

Section 10.8 (a): Factoring Using the Distributive Property

1. Factor out the greatest common factor.

a. $14x^2 + 21x$
 $7x(2x+3)$

b. $6y^2 + 9y$
 $3y(2y+3)$

c. $12x^5 + 36x^3$
 $12x^3(x^2+3)$

d. $25x^3 + 15x^2 - 10x$
 $5x(5x^2 + 3x - 2)$

e. $12w^5 - 16w^3 + 24w$
 $4w(3w^4 - 4w^2 + 6)$

f. $36x^4 + 4x^3 - 12x^2 + 20x$
 $4x(9x^3 + x^2 - 3x + 5)$

$4w(3w^4 - 4w^2 + 6)$ $4x(9x^3 + x^2 - 3x + 5)$

2. Tell whether the expression is factored completely. If it is not, write the complete factorization.

a. $2x(4x^2 - 6x + 12)$
 No $9-48$
 $D = -39$
 $2x \cdot 2(2x^2 - 3x + 6)$
 $4x(2x^2 - 3x + 6)$

b. $3x(5x^3 + 20x^2 - 35x)$
 $D = 4^2 - 4(2)(-7) = 16 + 28 = 44$
 $3x \cdot 5x(x^2 + 4x - 7)$
 $15x^2(x^2 + 4x - 7)$