## **Section 7.1** Focus Exercises

1. Use the Zero Product Principle to solve each equation.

a) 
$$(x + 3)(x - 7) = 0$$

b) 
$$(x - 2)(x - 4) = 0$$

c) 
$$(4x - 5)(2x + 9) = 0$$

d) 
$$(2x + 3)(5x - 6) = 0$$

e) 
$$-2x(x + 5) = 0$$

f) 
$$3x(9x - 5) = 0$$

g) 
$$(x + 8)(x - 8) = 0$$

h) 
$$(2x - 3)(2x + 3) = 0$$

**2.** Factor the polynomial and use the Zero Product Principle to solve each equation.

a) 
$$x^2 - 25 = 0$$

b) 
$$x^2 - 49 = 0$$

c) 
$$6x^2 - 54x = 0$$

d) 
$$-3x^2 + 12x = 0$$

**3.** Factor the polynomial and use the Zero product Principle to solve each equation.

a) 
$$x^2 - 9x + 20 = 0$$

b) 
$$x^2 + 12x + 35 = 0$$

c) 
$$x^2 - x - 90 = 0$$

d) 
$$x^2 + x - 42 = 0$$

e) 
$$4x^2 + 7x - 15 = 0$$

f) 
$$2x^2 - 13x + 15 = 0$$

g) 
$$4x^2 - 9x - 9 = 0$$

h) 
$$6x^2 + 14x + 4 = 0$$

**4.** Solve each quadratic equation by first having one side become 0. *Check your answers to verify that they are solutions.* 

a) 
$$x^2 + 2x - 4 = 59$$

b) 
$$x^3 + 23x^2 = 50x$$

c) 
$$(x + 6)(x - 7) = -40$$

d) 
$$x^2 - 4x = 3x - 10$$

e) 
$$x = 3x^2 - 10$$

f) 
$$x^2 - x = 18 - 4x$$