

**Factored Form of a Quadratic Function****Factor each expression.**

1.  $6x - 24$

2.  $3x + 36$

3.  $10x + 20$

4.  $42x - 35$

5.  $-x - 9$

6.  $-2x + 14$

**Determine the x-intercepts or zeros of each quadratic function in factored form.**

7.  $f(x) = (x - 2)(x - 8)$

8.  $f(x) = (x + 1)(x - 6)$

9.  $f(x) = 3(x + 4)(x - 2)$

10.  $f(x) = x(x - 5)$

11.  $f(x) = 0.5(x + 15)(x + 5)$

12.  $f(x) = 4(x - 1)(x - 9)$

**Write each quadratic function in factored form. Decide if the parabola opens up or down.**

13.  $f(x) = (-2x + 8)(x - 14)$

14.  $f(x) = (x + 16)(2x + 16)$

15.  $f(x) = x^2 + 7x$

16.  $f(x) = (-3x + 9)(x + 3)$

**Write a quadratic function in factored form with each set of given characteristics.**17. Write a quadratic function that represents a parabola that opens down and has x-intercepts  $(-2, 0)$  and  $(5, 0)$ .18. Write a quadratic function that represents a parabola that opens up and has x-intercepts  $(3, 0)$  and  $(7, 0)$ .