

## Quadratic Functions Review

### Factoring to Solve Equations

Factor by using the distributive property.

1.  $15cd + 30c^2d^2$

2.  $8p^2q^2 - 24pq^3 + 16pq$

Factor by grouping.

3.  $6xy - 8x + 15y - 20$

4.  $10xy - 8x + 15y - 12$

Set equal to zero if needed, factor, then solve the equation.

5.  $n^2 + 4n = 32$

6.  $z^2 - 14z = 72$

7.  $u^2 = 16u + 36$

Factor each equation using difference of squares, then solve the equation.

8.  $98b^2 - 50 = 0$

9.  $\frac{16}{49} - v^2 = 0$

10.  $75g^3 = 147g$

Find the solution to each word problem below.

11. A science class launched a toy rocket from ground level with an initial upward velocity of 60 ft/sec. The height of the rocket in feet after  $t$  seconds is modeled by the equation  $h = 60t - 16t^2$ . How long was the rocket in the air before it returned to the ground?

12. A rock breaks loose from a cliff and plunges toward the ground 400 feet below. The distance  $d$  that the rock falls in  $t$  seconds is given by the equation  $d = 16t^2$ . How long does it take the rock to hit the ground?