**Determine the values of *d* that complete the square for the expression.**

1. (a) x2 + 9x + *d* (b) x2 – 8x + *d* (c) x2 + *d*x + 36 (d) x2 + *d*x + $\frac{49}{4}$
2. (a) x2 + 13x + *d* (b) x2 – 6x + *d* (c) x2 + *d*x + 25 (d) x2 + *d*x + $\frac{81}{4}$

**Solve by completing the square.**

1. x2 + 6x + 7 = 0 4. x2 – 8x + 11 = 0 5. 4x2 – 12x – 11 = 0

 6. 4x2 + 20x + 13 = 0

**Solve by using the quadratic formula.**

 7. 6x2 – x = 2 8. x2 + 4x + 2 = 0 9. 2x2 – 3x – 4 = 0

**Solve for the specified variable.**

10. K = $\frac{1}{2}mv^{2}$ for *v*. 11. F = g$\frac{mM}{d^{2}}$ for *d*.

12. A baseball is thrown straight upward with an initial speed of 64 ft/sec. The number of feet *s* above the ground after *t* seconds is given by the equation s = -16t2 + 64t.

1. When will the baseball be 48 feet above the ground?
2. When will the baseball hit the ground?