Name:_____ Date:_____

**Unit 2: Solving Quadratic Functions**

**Solve by completing the square**

1) $x^2 - 10x + 14 = 0$

2) $x^2 + 4x - 12 = 0$

**Solve by factoring**

3) $x^2 + 4x - 5 = 0$

4) $3x^2 - 17x - 6 = 0$

**Solve by taking square roots**

5) $2(x-3)^2 + 10 = 24$

6) $35 = 5x^2 - 15$

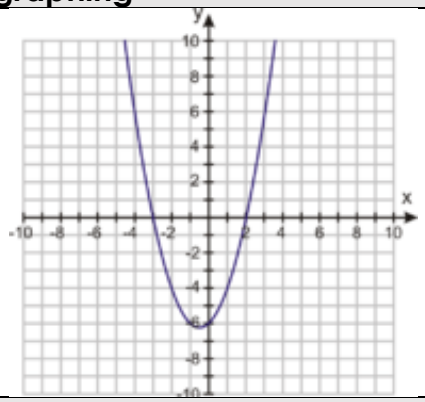
**Solve by using the quadratic formula**

7) $x^2 + 3x + 1 = 0$

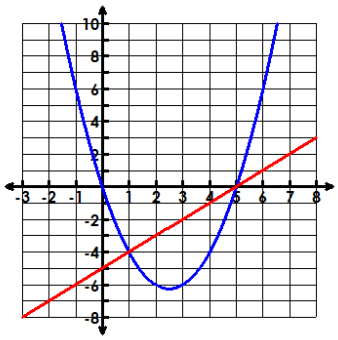
8) $2x^2 - 28x - 4 = 0$

**Solve by graphing**

9)




10)




**Application problems**

11) A rocket carrying fireworks is launched from a hill 80 feet above a lake. The rocket will fall into lake after exploding at its maximum height. The rocket's height above the surface of the lake is given by $h(t) = -16t^2 + 64t + 80$.

a. What is the height of the rocket after 3 seconds?

b. After how many seconds after it is launched will the rocket hit the lake?

c. How many seconds will it take for the rocket to be 50 feet above the lake?