NCM1B Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 4 Part I Lesson 3 Homework: Quadratics Applications**

**Directions:** Solve each quadratic word problem using factoring. Write you answer as a complete sentence.

1. The height of a flare fired from the deck of a ship in distress can be modeled by $h\left(t\right)=-16t^{2}+104t+56$, where *h* is the height of the flare above water and *t* is the time in seconds. How long was the flare airborne?

2. Robert threw a rock off a bridge into the river. The distance from the rock to the river is modeled by the equation $h\left(t\right)=-16t^{2}-16t+60$ where *h* is the height in feet and *t* is the time in seconds. How long did it take of the rock to hit the surface of the water.

3. The area of a triangle is 108 square feet. If the height is 6 less than twice the base, then find the base and the height of the triangle.

4. The area of a rectangle is 24 cm2. The width of the rectangle is five centimeters less than the length. Find the dimensions of the rectangle.