**Word Problems:**

* a general approach to problem solving using quadratics is:
  + determine if you are solving for x-intercepts, y-intercepts, the vertex, or all three
  + use your graphing calculator to graph the function
  + calculate the required value(s)
  + check your answer (does it make sense in the context of the question?)

**Examples:**

1. A bus company charges $2 per ticket but wants to raise the price. The daily revenue is modeled by R(x) = -30(x – 6)2 + 34 320, where ***x*** is the number of $0.15 price increases and R(x) is the revenue in dollars. What should the price of the tickets be if the bus company wants to collect daily revenue of $30,000?
2. The engineers who designed an arch used the function h(x) = -0.005061x2 + 0.499015x to describe the height of the arch (h) a distance of x from each end. Determine the distance between the ends of the arch, and the height of the arch.
3. You are an astronaut on the Moon. You hit a golf ball with your golf club. The height of the ball, h(t), in metres, after time, t, is modeled by the function h(t) = -0.81t2 + 5t. What is the maximum height of the ball? How long is it in the air for?
4. The area of a rectangle is 560 cm2. The length is 3 more than twice the width. Find the dimensions of the rectangle.
5. The sum of the squares of two consecutive real numbers is 61. Find the numbers.
6. The product of two consecutive negative integers is 1122. What are the numbers?
7. Determine three consecutive odd integers if the square of the largest integer is 33 less than the sum of the squares of the two smaller integers.
8. A right triangle has a perimeter of 24 cm and a hypotenuse of 10 cm. Find the length of the other two sides.