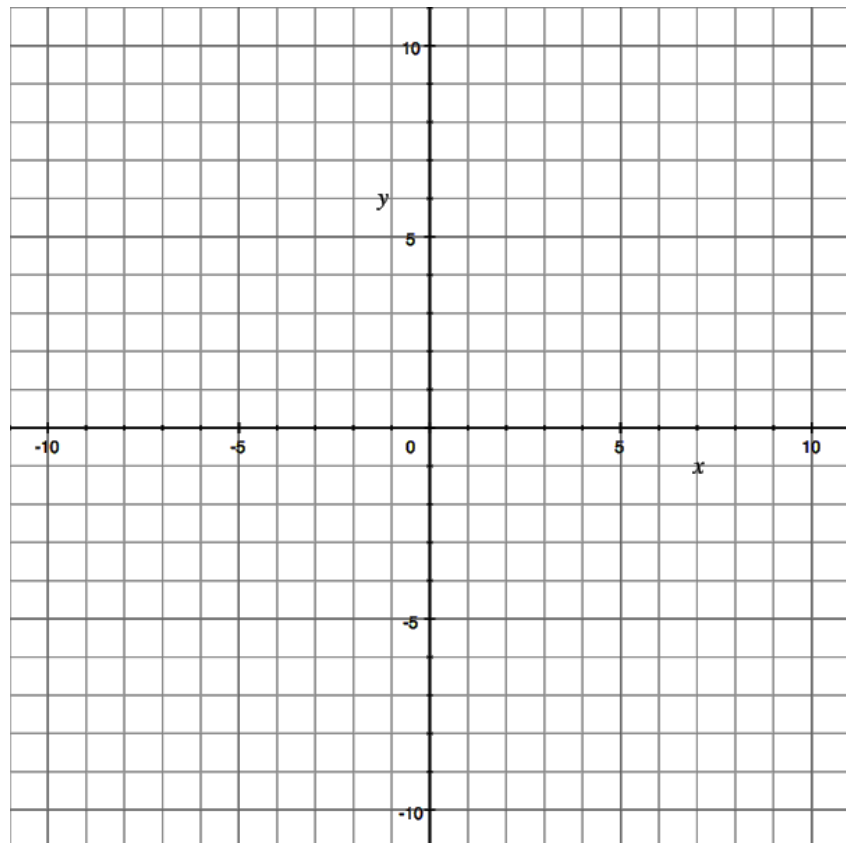


Number:  
Title:

Textbook Section:

1. Identify the vertex, axis of symmetry, intercepts and range. Then sketch the graph of the function.

$$f(x) = -x^2 - 2x - 6$$



2. Determine whether the quadratic function has a maximum or minimum value. Then find the maximum or minimum value and where it occurs.

$$f(x) = 2x^2 - 5x + 1$$

3. If a juggler can toss a ball into the air at a velocity of 64 ft/sec from a height of 6 ft, then what is the maximum height reached by the ball? Use the formula  $h(t) = -16t^2 + v_0t + h_0$ , which gives the height  $h$  of an object thrown into the air after  $t$  seconds. The initial velocity is  $v_0$  and the initial height is  $h_0$ .

4. A company has found that the revenue, in dollars, from selling widgets is a function of the unit price  $p$ , in dollars, that it charges. If the revenue  $R$  is

$$R(p) = -\frac{1}{2}p^2 + 1900p$$

what unit price  $p$  should be charged to maximize revenue? What is the maximum revenue?

5. A farmer with 8000 meters of fencing wants to enclose a rectangular plot and then divide it into two plots with a fence parallel to one of the sides. What is the largest area that can be enclosed? What are the lengths of the sides of each part of the enclosed area?

6. The graph of the quadratic function  $f(x) = ax^2 + bx + c$  has vertex at  $(1, 4)$  and passes through the point  $(-1, -8)$ . Find  $a$ ,  $b$ , and  $c$ .