

**General Algebra 2 Worksheet #2 Unit 9 page 1 \_\_\_\_\_**

**A slingshot was used to launch a small rock upward from a cliff 100 feet above a river. The function  $h(t) = -16t^2 + 96t + 100$  (where  $t \geq 0$ ) gives the height,  $h$ , in feet of the rock above the river after  $t$  seconds.**

**1. How high above the river will the rock be after 2 seconds?**

**2. How high above the river will the rock be after 5 seconds?**

**3. When will the rock again be 100 feet above the river?**

**4. When will the rock be 240 feet above the river?**

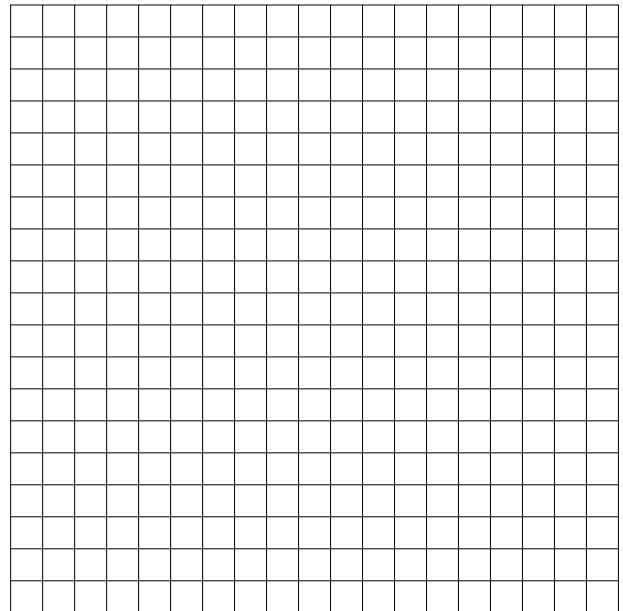
**5. How long will it take the rock to hit the river?**

## General Algebra 2 Worksheet #2 Unit 9 page 2

A slingshot was used to launch a small rock upward from a cliff 100 feet above a river. The function  $h(t) = -16t^2 + 96t + 100$  (where  $t \geq 0$ ) gives the height,  $h$ , in feet of the rock above the river after  $t$  seconds.

6. What is the maximum height reached by the rock above the river? How long did it take the rock to reach its maximum height?

7. Sketch a graph of this function from  $t = 0$  until the rock hits the river.



## General Algebra 2 Worksheet #2 Unit 9 page 3

A company manufactures laboratory scales for pharmacies. They found that their monthly profit,  $P$ , depends on the selling price,  $s$ , according to the function below. (Assume that both  $P$  and  $s$  are measured in dollars.)

$$P = -1.4s^2 + 980s - 115,550.$$

8. What would be their monthly profit if the selling price was \$200?
  
  
  
  
  
  
  
  
  
  
9. What value(s) of  $s$  correspond to 'break even points' (where the profit is 0).
  
  
  
  
  
  
  
  
  
  
10. What value of  $s$  will correspond to a maximum profit? What is the maximum profit?
  
  
  
  
  
  
  
  
  
  
11. Sketch a graph of this function for values of  $s$  from 0 to \$600.

