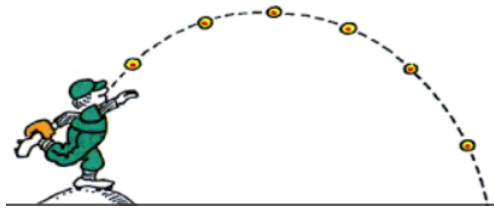


Name: \_\_\_\_\_ Date: \_\_\_\_\_

### HW: Quadratic Applications



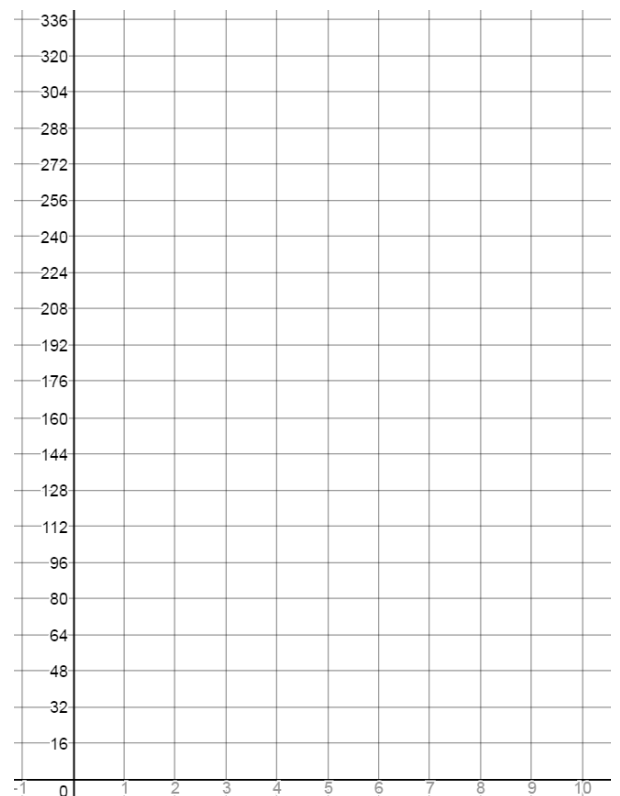
1. After  $t$  seconds, a ball tossed in the air from the ground level reaches a height of  $h$  feet given by the equation  $h = 144t - 16t^2$ .

a. What is the height of the ball after 3 second?

b. What is the maximum height the ball will reach?

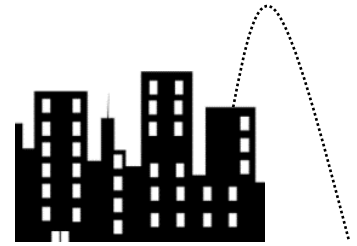
c. Find the number of seconds the ball is in the air when it reaches a height of 224 feet.

d. After how many seconds will the ball hit the ground?





2. Batman is standing on stop of a building in Gotham city. He throws a batarang in an arc to hit a sewer lid on the ground. The path of the batarang can be modeled by the equation  $d = -16t^2 + 96t + 100$ .



- How tall is the building that Batman throws his batarang from?
- What is the maximum height his batarang will reach and how long will it take for it to reach that height?
- How many seconds will it take for the batarang to hit the sewer? **HINT: You will need to use the quadratic formula because it is not an EXACT zero!** *ALSO since this is a word problem you can give your answer as a decimal rounded to the tenth place (meaning you can just find the decimal or your radical without simplifying)*

