Name:_____ Date:_____Period:_____

A.___ QUADRATIC Applications

Given the word problem, solve for the information requested.

1. A punter kicks a football into the air with an initial velocity of 84 feet per second. The equation $h = -16t^2 + 84t$ gives the height of the ball after t seconds.

What is the maximum height of the football?

2. Brett dives off the diving board at his diving meet. The equation for his pathway can be modeled by $h = -16t^2 + 14t + 15$.

How long does it take him to hit the water below?

3. Amanda threw her Algebra book off a 4-story building at the end of the school year. The equation $h = -16t^2 + 24t + 40$ gives the height of the book after t seconds.

At what time will her book hit the ground?

4. The pathway of a quarter being thrown off a bridge can be modeled by the equation $h = -16t^2 + 72t + 120$.

At what time does the quarter reach a height of 50 feet?

5. Adam kicks a soccer ball into the air with an initial velocity of 80 feet per second. The equation $h = -16t^2 + 80t$ gives the height of the ball after t seconds.

What is the maximum height of the soccer ball?

6. Refer to soccer ball scenario in question 5.

At what time does the soccer ball reach its maximum height?

7. Jeremy's height while jumping on a trampoline can be modeled by the equation $h = -16t^2 + 18t + 6$.

What is the maximum height that Jeremy will bounce?

8. A canon is fired, and the equation for the path of the cannonball can be modeled by $h = -16t^2 + 120t + 1$.

At what time will the cannonball hit the ground?

9. A baseball player hits a baseball into the air with an initial velocity of 100 feet per second. The equation $h = -16t^2 + 100t + 3$ gives the height of the ball after t seconds.

At what time will the baseball reach its maximum height?

10. An egg, protected in a container made in science class, is dropped off the edge of a two-story building. The equation for the pathway of the egg can be modeled by $h = -16t^2 + 20$.

After how long will the egg reach a height of 5 feet?