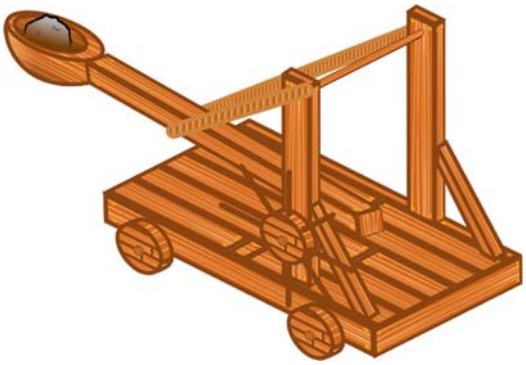
Name _____

Quadratic Equation Word Problems



1. Emily is launching a projectile from a catapult. The height h (in meters) of the projectile above the ground at time t seconds is given by the quadratic equation $h(t) = -5t + 20t + 10$. When does the projectile hit the ground?

2. Jack is driving a car along a straight road. The distance d (in meters) the car travels after t seconds is given by the quadratic equation $d(t) = 4t^2 + 10t + 20$. How long does it take for the car to stop?

3. Mia is a scientist studying the growth of bacteria in a petri dish. The number of bacteria n in the dish after t hours is given by the quadratic equation $n(t)=3t^2 + 12t + 5$. After how many hours will the number of bacteria reach its maximum?

4. Ethan is a farmer planting crops in a rectangular field. The area A (in square meters) of the field after t days of planting is given by the quadratic equation $A(t) = -2t^2 + 16t + 20$. How many days does it take for the field to reach its maximum area?

5. Sophia is launching a model rocket. The height h (in meters) of the rocket above the ground at time t seconds is given by the quadratic equation $h(t)= -3t^2 + 18t + 12$. What is the maximum height the rocket reaches?

6. Lucas is an architect designing an arched bridge. The height h (in meters) of the bridge at a distance x meters from the center is given by the quadratic equation $h(x) = -x^2 + 6x + 8$. How far from the center is the highest point of the bridge?

7. Olivia is a business owner analyzing the profit of her company. The profit P (in dollars) after t months of operation is given by the quadratic equation $P(t) = -2t^2 + 40t - 50$. When does the company achieve its maximum profit?

8. Daniel is an engineer designing a roller coaster. The height h (in meters) of a loop-the-loop at a distance x meters from the center is given by the quadratic equation $h(x) = -x^2 + 10x + 5$. How far from the center is the highest point of the loop-the-loop?

9. Sarah is a golfer analyzing the trajectory of her ball. The height h (in meters) of the ball above the ground at time t seconds after being hit is given by the quadratic equation $h(t) = -4t^2 + 20t + 10$. When does the ball reach its maximum height?

10. Noah is a physicist studying the motion of a pendulum. The angle θ (in degrees) of the pendulum at time t seconds after being released is given by the quadratic equation $\theta(t) = -1/2t^2 + 6t + 10$. When does the pendulum reach its maximum angle?