

Quadratic Functions Word Problems

1. A stone is thrown above from the top of a roof. The distance between the stone and the ground in t seconds is given by the function $d = -16t^2 - 4t + 442$. How long after the throw of the stone is it 430 feet from the ground?

2. A rocket is launched from the roof of a building. Its flight path is modeled by the equation $h(t) = -15t^2 + 35t + 10$, where h is the height of the rocket above the ground in meters and t is the time after the launch in seconds. Find the rocket's maximum height to the nearest tenth of a meter.

3. Ashton throws a ball from a point 40 m above the ground. The height of the ball from the ground level after ' t ' seconds is given by the function $h(t) = -5t^2 - 40t$. How long will the ball take to hit the ground?

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Answers

1. A stone is thrown above from the top of a roof. The distance between the stone and the ground in t seconds is given by the function $d = -16t^2 - 4t + 442$. How long after the throw of the stone is it 430 feet from the ground?

0.75 seconds

2. A rocket is launched from the roof of a building. Its flight path is modeled by the equation $h(t) = -15t^2 + 35t + 10$, where h is the height of the rocket above the ground in meters and t is the time after the launch in seconds. Find the rocket's maximum height to the nearest tenth of a meter.

30.4 seconds

3. Ashton throws a ball from a point 40 m above the ground. The height of the ball from the ground level after ' t ' seconds is given by the function $h(t) = -5t^2 - 40t$. How long will the ball take to hit the ground?

8 seconds