

4. The height of a rocket launched upward from a 160-foot cliff is modeled by $h = -16t^2 + 48t + 160$, where h is the height in feet and t is the time in seconds.

a. How long will it take for the rocket to reach its maximum height?

b. How high will the rocket go?

5. The height of a rock thrown off a cliff can be modeled by the equation $h = -16t^2 - 8t + 120$, where h is the height in feet and t is the time in seconds.

a. How high above the ground is the rock 2 seconds after it is thrown?

b. How long does it take the rock to reach the ground?

6. During a game of golf, Kayley hits her ball out of a sand trap. The height of the golf ball is modeled by the equation $h = -16t^2 + 20t - 4$, where h is the height in feet and t is the time in seconds since the ball was hit.

a. What does the -4 in the equation tell you about the situation?

b. Find how long it takes Kayley's golf ball to hit the ground.

c. How high was Kayley able to hit the golf ball? (This is tricky, think about the situation.)

d. How long after Kayley hit the ball will it reach its highest point?