

Name: _____ Date: _____

Characteristics of Quadratic Equations

Wile E. Coyote is catapulting a boulder off a cliff to hit the road runner. Let t represent the number of seconds that the boulder catapults off the cliff and $h(t)$ denote the height of the boulder, in feet, above the base of the cliff. Ignoring air resistance, we can use the following formula to express the path of the boulder: $h(t) = -16t^2 + 24t + 160$

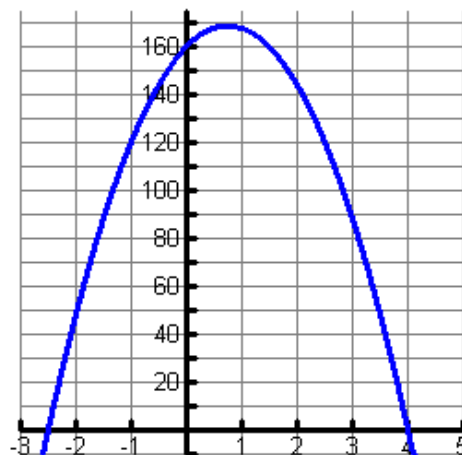
1. What does the x axis represent? _____ The y axis? _____

2. What part of the graph is insignificant? Why?

3. What was the height of the boulder before it was launched? _____

What special point on the graph is associated with this information? _____

4. If Wile E. Coyote simply pushed a boulder off the cliff, how would the graph look different?



5. How long will it take before the boulder reaches the bottom of the cliff? _____

What special point on the graph is associated with this information? _____

6. After how many seconds does the boulder change direction? _____

How high is the boulder when it changes direction? _____

What is this significant point called on the graph? _____

7. How high above the starting point does the boulder begin to change direction?

8. If Wile E. Coyote changes his mind, how many seconds does he have to stop the boulder from going over the cliff? _____
