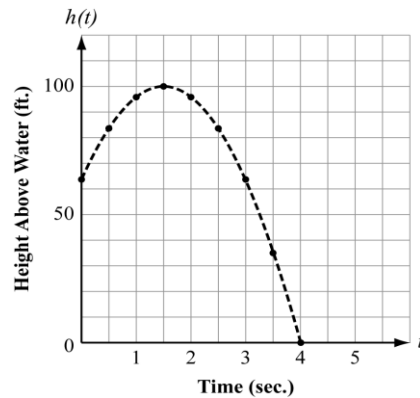


Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Quadratics Modeled in the Real World

Philip is standing on a rock ledge 64 feet above a lake, and he tosses a rock with a velocity of 48 feet per second. This graph and table represent the height above the water,  $h(t)$ , as a function of time,  $t$ , in seconds after Philip releases the rock.



Time $t$	Height $h(t)$
0	64
1	96
2	96
3	64
4	0

1. What is the maximum height of the rock?
2. After how many seconds does the rock change direction in the air?
3. When does the rock hit the surface of the lake?  
What is this point on the graph called?  
How can you identify this from the table?
4. Identify the vertex and the axis of symmetry.  
What do these represent in our story?
5. At 1 sec, what direction is the rock moving?  
At 2 sec, what direction is the rock moving?

