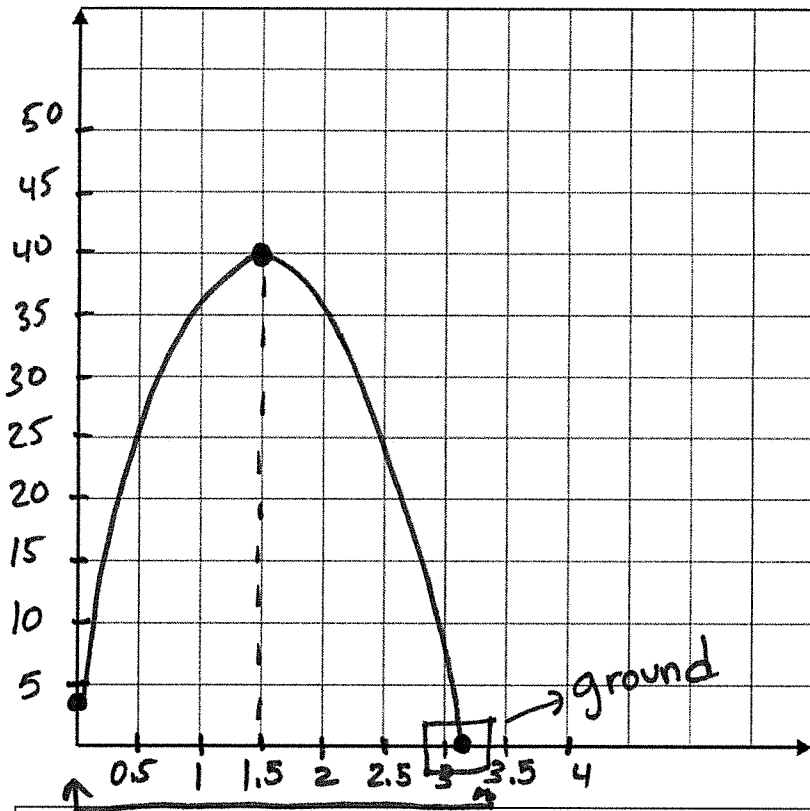


An arrow shot upward with an initial velocity of 48 feet per second. The height of the arrow, h (in feet) after t (in seconds) is given by the equation: $h = -16t^2 + 48t + 4$

- a) How long does it take the arrow to reach its maximum height? (t)
 b) What is the maximum height? h
 c) How long does it take for the arrow to land? Time (Zeros)

Speed → height → Time
 height speed original height
 $t = 0$

Height (ft)



Vertex (t, h)
 Time height

Vertex (1.5, 40)

Zero (3.08, 0)

- (a) $t = 1.5$ sec
 (b) $h = 40$ ft
 (c) $t = 3.08$ sec

Things to remember when completing quadratic application word problems:

1- t is Time

• It represents Solutions after the object was released

2- h or d is height/distance.

• It represents y-value / how high my object went over time

*When an object hits the ground, its height = 0. $h = 0$