Alg 2 5.5 Solve Quadratics by Graphing **Name**_____ **HR**__\

Use a graph to solve.

1. A toy rocket is fired upward from the ground. The relation between its height h, in feet and the time t from launch, in seconds, can be described by the equation $h = -16t^2 + 64t$. Draw a sketch of the graph.

x = y =

a) What is the maximum height the rocket will reach? At what time will it reach the maximum height?

b) How long is the rocket in the air?

c)What is a reasonable domain and range for this model?

2. An archer's arrow follows a path described by the equation $y = -.005x^2 + 2x + 5$, using feet and seconds. Draw a sketch of the graph.

of the graph.

x = y =

a) What is the maximum height the arrow will reach? At what time will it reach max height?

b) How long is the arrow in the air?

c)What is a reasonable domain and range for this model?

3. The expression $P(x) = 2500x - 2x^2$ describes the profit of a company that customizes bulldozers when it customizes x bulldozers in a month. Sketch the graph.

x = y =

a) What is the maximum profit in a month? How many bull dozers must they sell to reach the max?

b) What is the range and domain?

4. Graph the following equation. $y = 4x^2 + 3x - 1$.

a) Find the vertex

b) Find the x intercepts. What do they represent?