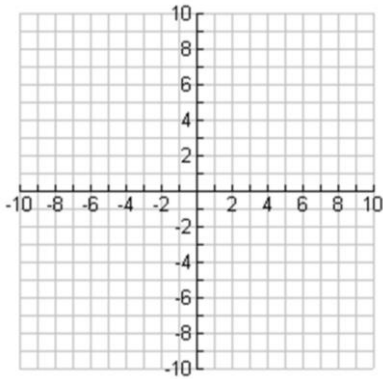# Applications of Quadratics From Graphs

Name: _____ Hr:_____

Given the function below find the following.

1. $y = -2x^2 + 8x - 10$


A) **Vertex Form** _____
B) **Vertex** _____
C) **Axis of Symmetry** _____
D) **Max/Min** _____
E) **x- intercept** _____
F) **y-intercept** _____
G) **Domain and Range** _____
H) **f(1)** _____
I) **Sketch the graph**

2. Given the picture below, match the key features on the left to real world application on the right.

A. x coordinate of the Vertex (h)

B. y coordinate of the Vertex (k)

C. y-intercept

D. x-intercept

E. Realistic domain

F. Realistic Range

G. f(3): Substitute 3 in for x and find y

a) The starting distance to the ending distance
b) Starting height
c) at a distance of 3 units how high is the ball
d) Maximum height
e) Where it lands
f) From ground level to the maximum height
g) How far it has gone at the maximum height
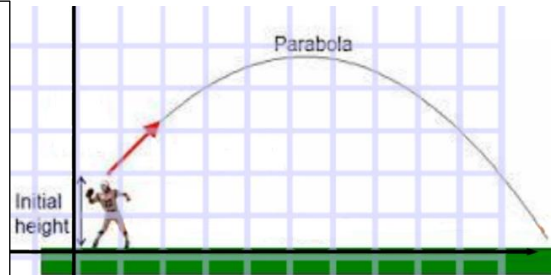
3. The graph $h(t)$ represents the height of a tennis ball thrown upward.

a) Domain:

b) Range:

c) When does the tennis ball reach its maximum height?

d) What is the maximum height of the tennis ball?

e) $h(0)$

f) $h(0.2)$

g) $h(1)$

h) What does $h(0.2)$ represent?

i) What does the y-intercept represent? What is the y-intercept?

j) What does the x-intercept represent? What is the x-intercept
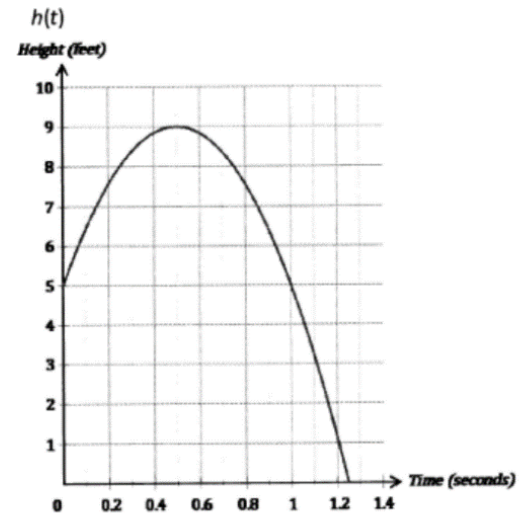
4. The graph represents the height of an air-filled ball thrown in a swimming pool.

a. Domain: Range:

b. What does the y-intercept represent?

c. What does the x-intercept represent?

d. When does the ball reach the minimum height?

e. What is the minimum height?

f. Estimate the time (in seconds) when the ball has a height of -2 feet?

g. Estimate the height of the ball at 0.5 seconds?

h. Estimate the height of the ball at 2 seconds?
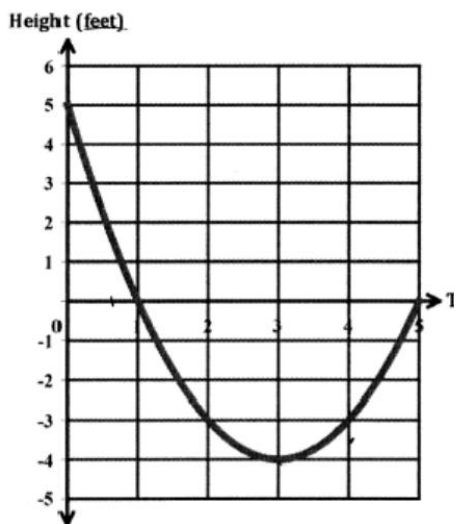
5. The graph $h(t)$ represents the height of a rocket shot up into the sky. The equation is $h(t) = -16t^2 + 200t$. Use the graph as a guide to find what is asked below. Then use the equation to find the exact answers.

a. Find the Domain and write a sentence describing the meaning of the domain for h(t).

b. Find the Range and write a sentence describing the meaning of the range for h(t).

c. Find the y-intercept, and describe what it represents?

d. Find the x-intercepts, and describe what they represents?

e. Find h(8), and describe what it represents?

f. Estimate the time(s) (in seconds) that the rocket is at a height of 450 feet.

g. Find the vertex. Describe what the x coordinate and the y coordinate of the vertex represent.