Math-2A Name_____ ID: 1

SM2-A HW #5-8 (Quadratic Modeling-Projectile Motion)

Date_____

1) A rock is dropped from a 100 foot tower. The height of the rock as a function of time can be modeled by the equation: $h(t) = -16t^2 + 100$. How long does it take for the rock to reach the ground?

2) A rock is dropped on the surface of Mars from a height of 100 feet. The height of a falling rock as a function of time since it was dropped on Mars can be modeled by the equation: $h(t) = -6.5t^2 + 100$. How long does it take for the rock to hit the surface of Mars?

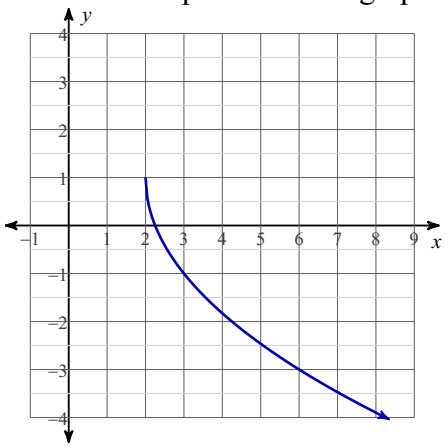
3) A ball is thrown from ground level upward at an intitial velocity of 60 ft/ sec. What is the ball's maximum altitude? The equation for "projectile motion" is $h(t) = -16t^2 + 60t$

4) A ball is thrown upward from the surface of Mars with an initial velocity of 60 ft/sec. What is the ball's maximum height above the surface before it starts falling back to the surface? The equation for "projectile motion" on Mars is: $h(t) = -6.5t^2 + 60\ t$

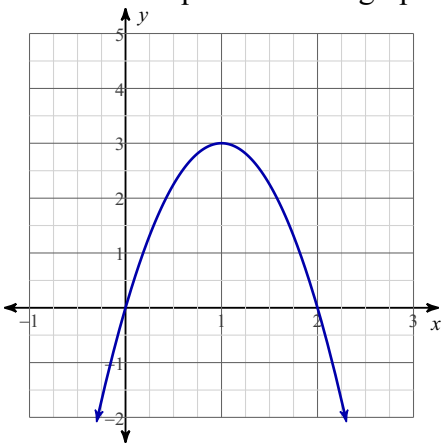
5) A rock is thrown upward from ground level with an intial velocity of 50 feet/sec. When will the rock hit the ground? Projectile motion can be modeled by he equation: $h(t) = -16t^2 + 50t$

6) A rock thrown upward from the surface of Mars with an initial upward velocity of 75 feet per second. The height of a rock can be modeled by the: $h(t) = -6.5t^2 + 75t$. How long does it take the rock to fall back to the surface of Mars?

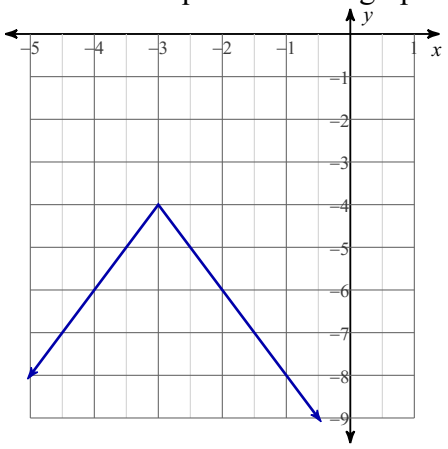
7) What is the equation of the graph?



8) What is the equation of the graph?



9) What is the equation of the graph?



Find the "zeroes" of the equations by finding square roots.

10) $2m^2 = -32$

11) $y = (x + 2)^2 + 3$

