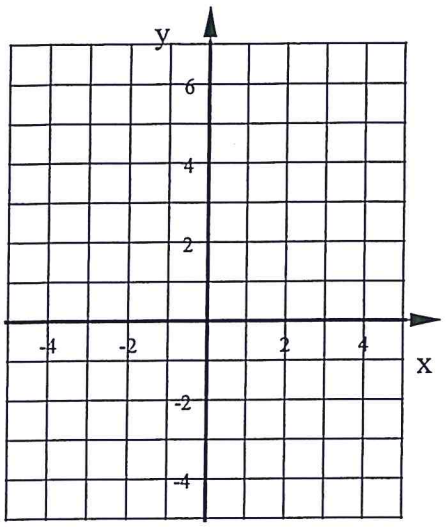
Algebra 1 Bellwork Thursday, April 23, 2015

1. Graph this quadratic with at least 5 points. $y = -2x^2 - 8x - 2$



2. A ball is shot up into the air from the top of a 10 foot tall platform with an initial velocity of 176 ft/sec. The following equation models the height of the ball as a function of time: $h(t) = -16t^2 + 176t + 10$

a) Find the maximum height the ball reaches.

b) Find the time it takes the ball to reach this maximum height.

3. The equation for the cost in dollars of producing car tires is $C = 0.000015t^2 - 0.03t + 35$ where t is the number of tires produced.

a) Find the number of tires that minimizes cost.

b) Find the minimum cost.

4. Find two factors of each number where one of the factors is the biggest perfect square possible.

a) 192 b) 294 c) 432 d) 180

ANSWERS

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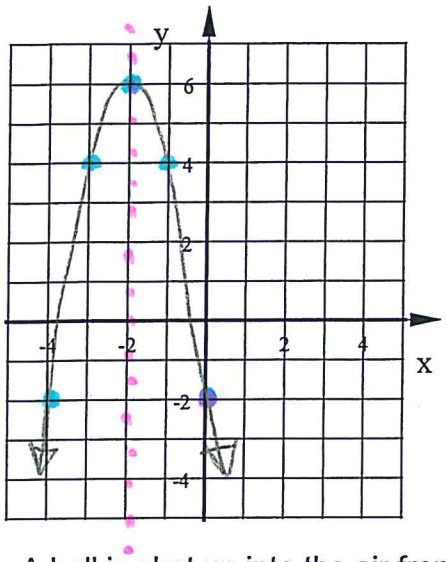
1. Graph this quadratic with at least 5 points. $y = -2x^2 - 8x - 2$



y-int = -2

LOS: $x = \frac{8}{2(-2)} = \frac{8}{-4} = -2$

Vertex (-2, 6)

$-2(-2)^2 - 8(-2) - 2$

X	Y
-1	4

$-2(-1)^2 - 8(-1) - 2$

2. A ball is shot up into the air from the top of a 10 foot tall platform with an initial velocity of 176 ft/sec. The following equation models the height of the ball as a function of time: $h(t) = -16t^2 + 176t + 10$

Y a) Find the maximum height the ball reaches.

(t, h)

max ht = $h(5.5) = -16(5.5)^2 + 176(5.5) + 10$

$= \boxed{494 \text{ ft}}$

X b) Find the time it takes the ball to reach this maximum height.

LOS $t = \frac{-176}{2(-16)} = \boxed{5.5 \text{ sec}}$

3. The equation for the cost in dollars of producing car tires is $C = 0.000015t^2 - 0.03t + 35$ where t is the number of tires produced.

X a) Find the number of tires that minimizes cost.

LOS: $t = \frac{0.03}{2(0.000015)} = \boxed{1000 \text{ tires}}$

(t, C)

Y b) Find the minimum cost.

$C = 0.000015(1000)^2 - .03(1000) + 35$

$= \boxed{\$20}$

4. Find two factors of each number where one of the factors is the biggest perfect square possible.

a) 192 b) 294 c) 432 d) 180

64 · 3 49 · 6 144 · 3 36 · 5