

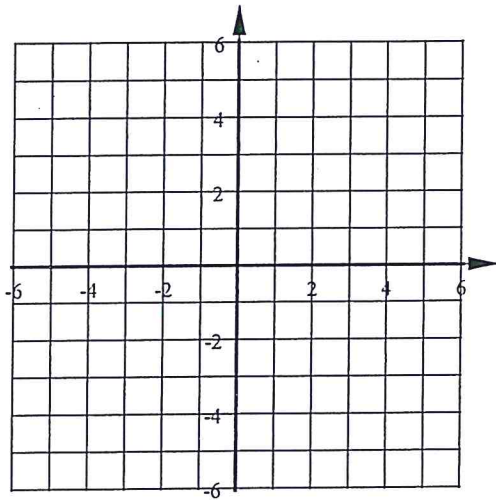
Algebra 1 Bellwork Tuesday, May 17, 2016

A company wants to maximize its profits by selling radios. The following equation gives the profit as a function of the number of hours the assembly line is operating each day.

$$P(h) = -48h^2 + 1800h - 1560$$

1. Find the maximum profit the company can make. Round to the nearest hundredth as needed.
2. Find the number of hours the assembly line should be operating daily to reach this maximum profit.

3. Graph this parabola using at least five points. $y = -\frac{1}{2}x^2 + 2x + 3$
Use only integer values to graph!



Simplify each square root.

4. $\sqrt{576}$

5. $\sqrt{384}$

6. $\sqrt{112}$

7. $\sqrt{343}$

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$$P(h) = -48h^2 + 1800h - 1560$$

Vertex

(h, P)

$$\frac{-b}{2a} = \frac{-1800}{2(-48)} = 18.75$$

$$P(18.75) = 15,315$$

1. Find the maximum profit the company can make. Round to the nearest hundredth as needed.

y-coordinate of Vertex

\$15,315

2. Find the number of hours the assembly line should be operating daily to reach this maximum profit.

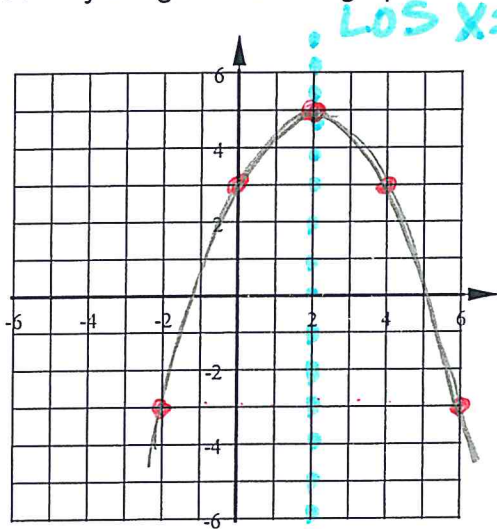
x-coordinate of Vertex

18.75 hrs

3. Graph this parabola using at least five points.

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Use only integer values to graph!



$$\text{LOS: } x = \frac{-2}{2(-1/2)} = \frac{-2}{-1} = 2$$

Vertex: (4, 5)

y-intercept = 3

$$\begin{array}{r|l} x & y \\ 6 & -3 \end{array}$$

Simplify each square root.

$$4. \sqrt{576} = 24$$

$$5. \frac{\sqrt{384}}{\sqrt{64 \cdot 6}} = 8\sqrt{6}$$

$$6. \sqrt{112} = \sqrt{16 \cdot 7} = 4\sqrt{7}$$

$$7. \frac{\sqrt{343}}{\sqrt{49 \cdot 7}} = 7\sqrt{7}$$