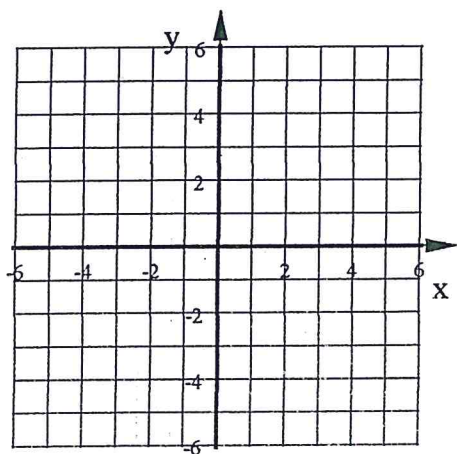1. A company wants to maximize their profit when they make washers. The following equation models the company's profit as a function of the number of washers they make each day:

$P(w) = -.35w^2 + 98w + 1350$

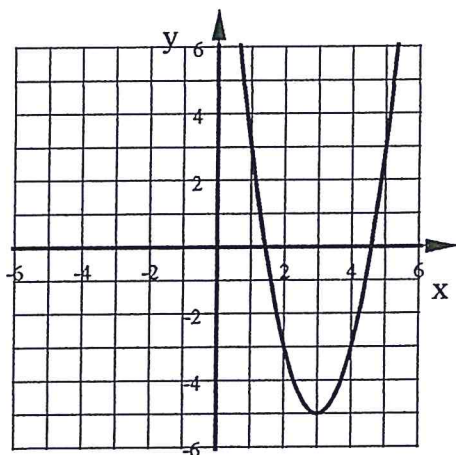a) Find the company's maximum profit.

b) How many washers should they make each day in order to achieve this maximum profit?

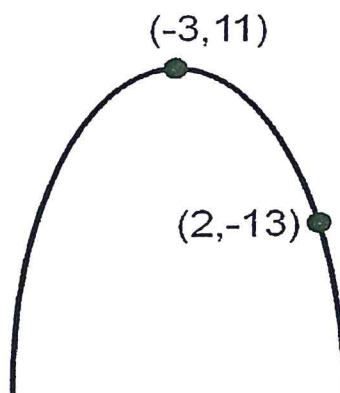2. Graph this parabola using only points with integer coordinates: $y = -\dfrac{1}{2}(x+1)^2 + 3$

For the rest of the problems write the equation of the quadratic in Vertex Form.

3.

4.

(-3,11)

(2,-13)

5. The parabola has a vertex of $(6,-5)$ and the point $(9,22)$ is on the parabola.

6. The parabola has a vertex of $(4,3)$ and it has an x-intercept of -6.

Bellwork   Alg 2A   Monday, February 13, 2017   Answers

1. A company wants to maximize their profit when they make washers. The following equation models the company's profit as a function of the number of washers they make each day:

$P(w) = -.35w^2 + 98w + 1350$

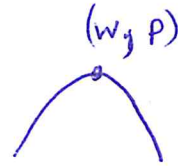(w, P)

a) Find the company's maximum profit.

y-coord of Vertex

max profit $= P(140) = \boxed{8210}$

b) How many washers should they make each day in order to achieve this maximum profit?
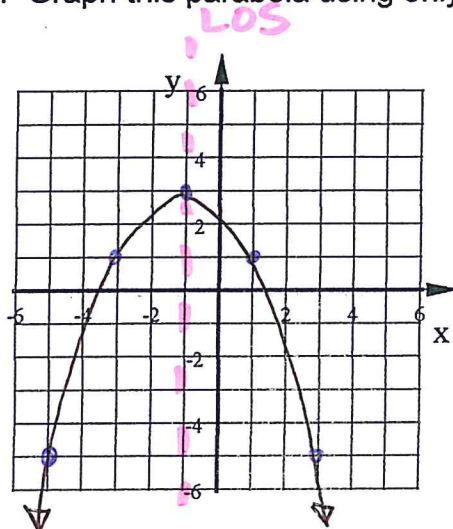
x-coord of Vertex   LOS: $w = \dfrac{-98}{2(-.35)} = 140$ (140 washers per day)

2. Graph this parabola using only points with integer coordinates: $y = -\dfrac{1}{2}(x+1)^2 + 3$

LOS

parent function

$\dfrac{\sqrt{4}\,x - \frac{1}{2}}{2}$

$\dfrac{\sqrt{16}\,x - \frac{1}{2}}{4}$

this function

$\dfrac{2}{}\Big]{-2}$
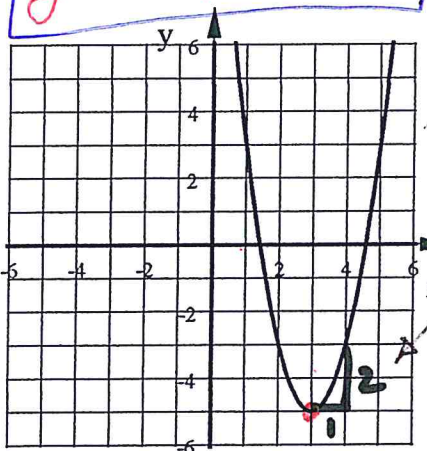
$\dfrac{4}{}\Big]{-8}$

1 Left   3 up

Vertex

$(-1, 3)$

LOS: $X = -1$

½ as Tall

opens down

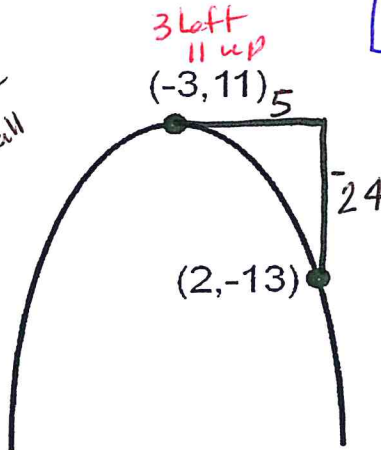For the rest of the problems write the equation of the quadratic in Vertex Form.

3. $\boxed{y = 2(x-3)^2 - 5}$

Twice as tall

3 RT 5 DOWN

4.

$\boxed{y = -\dfrac{24}{25}(x+3)^2 + 11}$

3 Left
11 up

$(-3, 11)$

5

24

$(2, -13)$

$a = \dfrac{-24}{25}$

This graph

$\dfrac{5}{}\Big]{24}$

parent function

$\dfrac{}{5}\Big]{25}$

5. The parabola has a vertex of $(6, -5)$ and the point $(9, 22)$ is on the parabola.

6 RT 5 DOWN

$\boxed{y = 3(x-6)^2 - 5}$

$(9, 22)$

27 parent

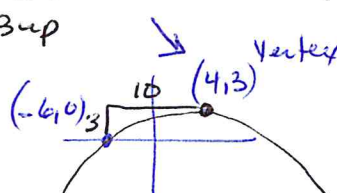$(6, -5)$ Vertex

$\dfrac{}{3}\Big]{9}$

$a = \dfrac{27}{9} = 3$ 1

6. The parabola has a vertex of $(4, 3)$ and it has an x-intercept of -6.

$\boxed{y = \dfrac{-3}{100}(x-4)^2 + 3}$

$a = \dfrac{-3}{100}$

4 RT 3 up

$(-6, 0)\,3$ 10 $(4, 3)$ Vertex

parent

$\dfrac{}{10}\Big]{100}$