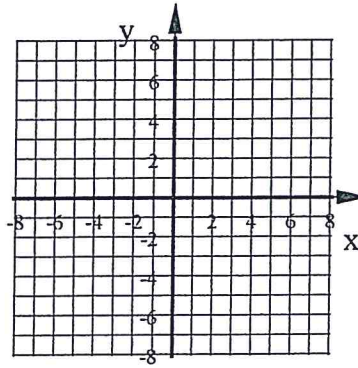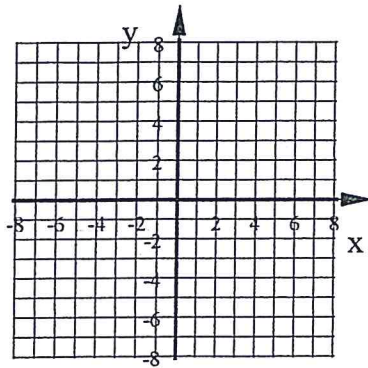# Bellwork Hon Alg 2   Monday, Octobber 31, 2016

Graph each parabola using at least five points.

1. $y = 4x^2 - 24x + 28$

2. $y = -2x^2 - 20x - 44$

3. A company wants to maximize their production. The following equation models the number of pieces they can produce as a function of the number of workers that they have working on a shift.

$P(w) = -0.9w^2 + 64.8w + 75$

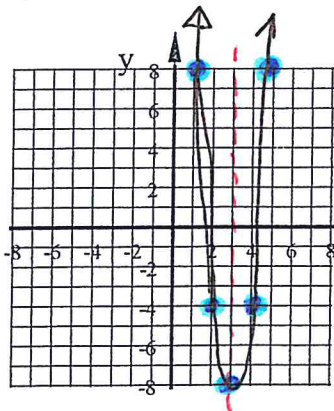a) Find the company's maximum production.

b) Find the number of workers that are needed for this maximum production.

Bellwork Hon Alg 2   Monday, Octobber 31, 2016   (Answers)

Graph each parabola using at least five points.

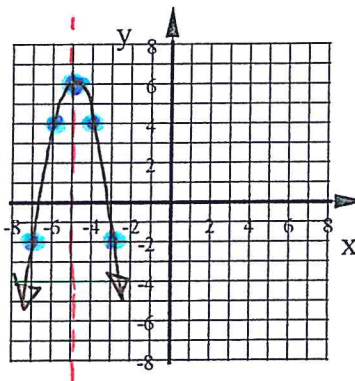1. $y = 4x^2 - 24x + 28$ LOS: $X = \frac{24}{8} = 3$

2. $y = -2x^2 - 20x - 44$ LOS: $X = \frac{20}{-4} = -5$

Vertex $(3, -8)$

Vertex $(-5, 6)$

$-|1 \times 4 \to -|4$

$-|4 \times 4 \to -|16$
   2 2

$-|1 \, x-2 \to \boxed{-2}$

$-|4 \, x-2 \to \boxed{-8}$
   2 2

3. A company wants to maximize their production. The following equation models the number of pieces they can produce as a function of the number of workers that they have working on a shift.

$P(w) = -0.9w^2 + 64.8w + 75$

→ VERTEX:

LOS $\frac{-b}{2a}$ $\frac{-64.8}{2(-.9)} = 36$

a) Find the company's maximum production. $\boxed{1241.4}$

b) Find the number of workers that are needed for this maximum production.

$\boxed{36}$

$(36, 1241.4)$
 W   P

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