

50

5/14

# ALGEBRA 1

## August 2018

35. Graph the following system of inequalities on the set of axes:

$$2y \geq 3x - 16$$

$$y + 2x > -5$$

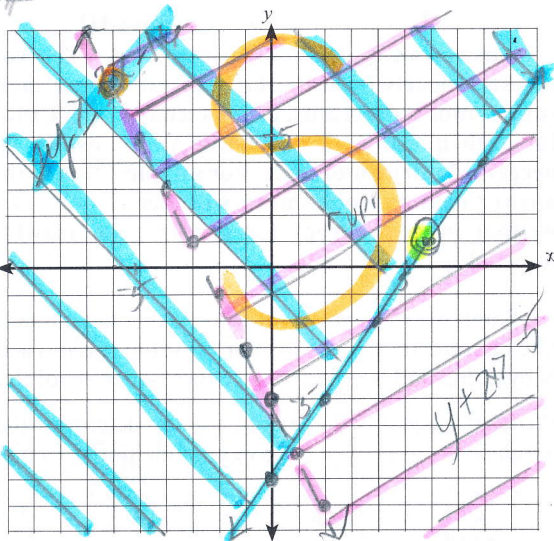
$$\frac{2y \geq 3x - 16}{2} \quad \frac{2}{2} \quad \text{solid}$$

$$y \geq \frac{3}{2}x - 8 \quad \text{shade } \uparrow$$

$$\frac{y + 2x > -5}{-2x \quad -2x}$$

$$y > -2x - 5$$

dotted, shade  $\uparrow$



Based upon your graph, explain why  $(6, 1)$  is a solution to this system and why  $(-6, 7)$  is not a solution to this system.

$(6, 1)$  falls in the inequality where  $y$  is greater than or equal to.

$(-6, 7)$  falls in the inequality where  $y$  is greater than, so it's not a solution.

36. Paul plans to have a rectangular garden adjacent to his garage. He will use 36 feet of fence to enclose three sides of the garden. The area of the garden, in square feet, can be modeled by  $f(w) = w(36 - 2w)$ , where  $w$  is the width in feet.

On the set of axes, sketch the graph of  $f(w)$ .

Explain the meaning of the vertex in the context of the problem.

$$f(w) = w(36 - 2w)$$

$$f(w) = 36w - 2w^2$$

$(9, 162)$   
 $\uparrow$  width  
 area  
 when the width is 9 ft, the area is 162 ft<sup>2</sup>.

