Bellwork Alg 2A Tuesday, November 22, 2016

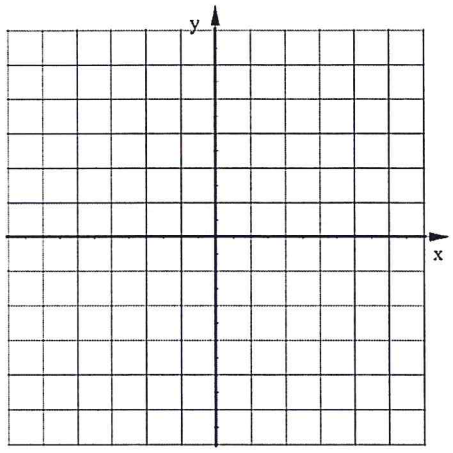
For 1 and 2 solve each system of equations. Give your answers as ordered pairs.

1. $y = |x - 3| - 1$
   $y = -\frac{1}{2}x + 2$

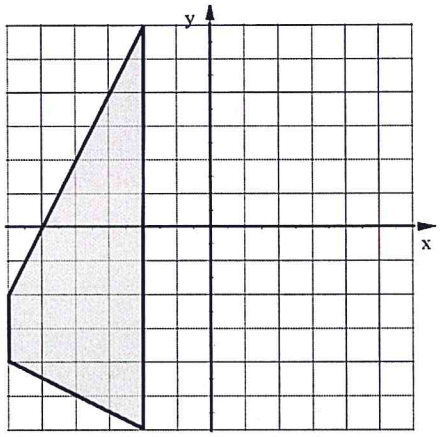
2. $y = 2x^2 + x - 3$
   $y = x^2 + 2x + 9$

3. Graph this system of inequalities: shown.

$-2 \le y \le 2$ $y < 2x + 6$ $x < 3$



4. Write a system of inqualities that model the graph



Bellwork Alg 2A Tuesday, November 22, 2016 Answers

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See next sheet

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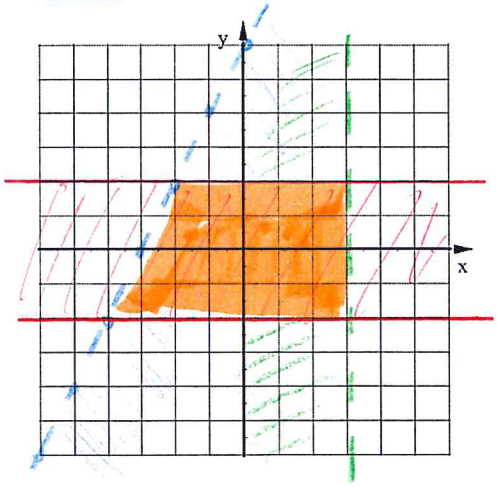
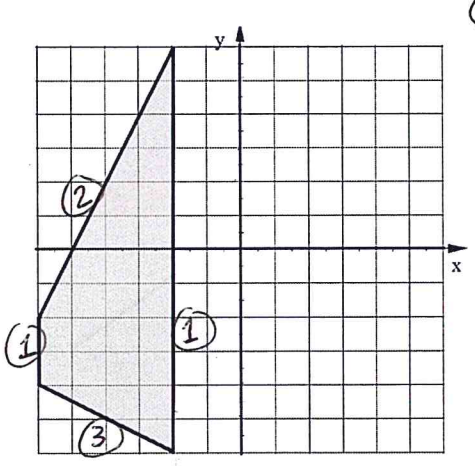


4. Write a system of inqualities that model the graph

① $-6 \le x \le -2$ ② $y \le 2x + 10$

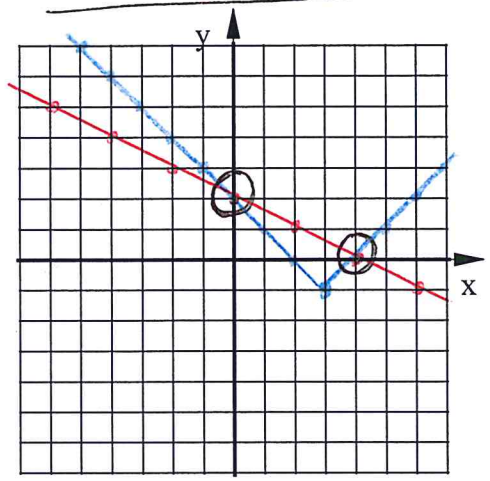
③ $y \ge -\frac{1}{2}x - 7$



① $y = |x-3| - 1$

$y = -\frac{1}{2}x + 2$

solve by graphing



solve with Algebra

use substitution

$|x-3| - 1 = -\frac{1}{2}x + 2$

$+1 \qquad +1$

$|x-3| = -\frac{1}{2}x + 3$

$x - 3 = -(-\frac{1}{2}x + 3)$

$x - 3 = \frac{1}{2}x - 3$

$-\frac{1}{2}x \quad -\frac{1}{2}x$

$\frac{1}{2}x - 3 = -3$

$+3 \quad +3$

$\frac{1}{2}x = 0$

$x = 0$

$x - 3 = -\frac{1}{2}x + 3$

$+\frac{1}{2}x \quad +\frac{1}{2}x$

$\frac{3}{2}x - 3 = +3$

$+3 \quad +3$

$\frac{2}{3} \cdot \frac{3}{2}x = 6 \cdot \frac{2}{3}$

$x = 4$

$(0, 2)$ $(4, 0)$

② $y = 2x^2 + x - 3$

$y = x^2 + 2x + 9$

use substitution

$2x^2 + x - 3 = x^2 + 2x + 9$

$x^2 - x - 12 = 0$

-12

$-4 \quad +3$

-1

$(x-4)(x+3) = 0$

$x = 4 \qquad x = -3$

$(4, 33)$ $(-3, 12)$