

Algebra 2 - Chapter 3 Quiz Review Part 2

Name: Key Hour: _____

Solving systems by testing solutions.

"Solution Bank": (0, 0), (-5, 1), (2, -8), (8, -3), (1, -1), No Solutions, Infinitely Many Solutions

1. $3x + 12y = -3$

3 $\begin{cases} -x - 5y = 0 \\ -3x - 15y = 0 \end{cases}$

$-3y = -3$

$y = 1$

(-5, 1)

2. $4x + y = 0$

$x - 3y = 26$

$12x + 3y = 0$

$13x = 26$

$x = 2$

only choice

(2, -8)

3. $x - 3y = 5$

$y = \frac{1}{3}x + 8$

$x - 3(\frac{1}{3}x + 8) = 5$

$x - x - 24 = 5$

$-24 = 5$

No solutions

4. $0.75x + 5y = 0$

$-0.75x + 27y = 0$

$-3 \cdot (0.25x - 9y = 0)$

$32y = 0$

$y = 0$

(0, 0)

5. $2x + 5y = 1$

$y = -3x + 21$

$2x + 5(-3x + 21) = 1$

$2x - 15x + 105 = 1$

$-13x = -104$

$x = 8$

(8, -3)

6. Is the point (2, -3, 5) the solution to the system?

$2x + 5y - z = -16$

$2(2) + 5(-3) - 5 = -16$

$\rightarrow -16 = -16 \checkmark$

$5x - y - 3z = -2$

$5(2) - (-3) - 3(5) = -2$

$\rightarrow -2 = -2 \checkmark$

$3x + 2y + 4z = 20$

$3(2) + 2(-3) + 4(5) = 20$

$\rightarrow 20 = 20 \checkmark$

(2, -3, 5) is a solution

Plug x, y, z into all equations, if all are true then it is a solution.

7. Is the point (-1, 3, 8) the solution to the system?

$8x + 10y - z = 14$

$8(-1) + 10(3) - (8) = 14$

$\rightarrow 14 = 14 \checkmark$

$11x + 4y - 3z = -23$

$11(-1) + 4(3) - 3(8) = -23$

$-23 = -23 \checkmark$

$2x + 3y + z = 10$

$2(-1) + 3(3) + 8 = 10$

$15 \neq 10 \times$

NOT a solution

8. Is the point (0, 3, 5) the solution to the system?

$5x - 3y + 2z = 1$

$5(0) - 3(3) + 2(5) = 1$

$\rightarrow 1 = 1 \checkmark$

$7x + 2y - z = 1$

$7(0) + 2(3) - (5) = 1$

$\rightarrow 1 = 1 \checkmark$

$x + 4y - 3z = -3$

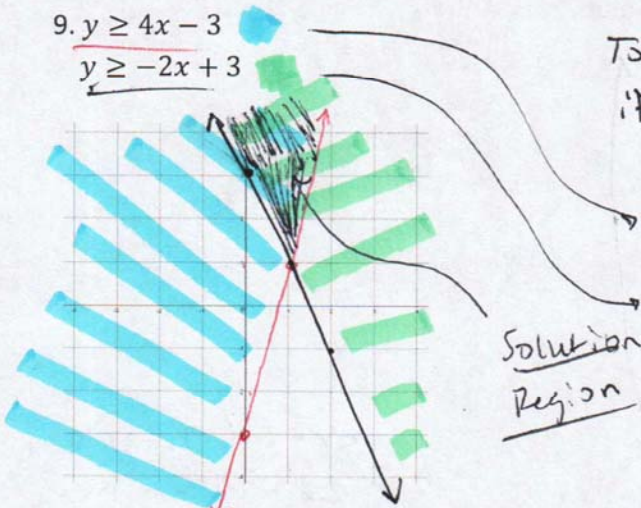
$0 + 4(3) - 3(5) = -3$

$\rightarrow -3 = -3 \checkmark$

(0, 3, 5) is a solution

Graph the solution to the systems of inequalities below.

9. $y \geq 4x - 3$
 $y \geq -2x + 3$



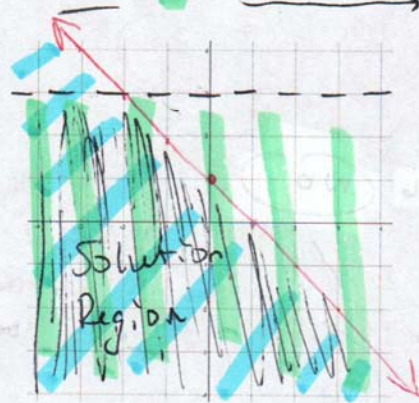
To shade, test points. I choose (0,0)
 if my lines do not directly cross (0,0)

$0 \geq 4(0) - 3$ $0 \geq -3$ True ✓

$0 \geq -2(0) + 3$ $0 \geq 3$ False ✗

Solution Region

10. $y \leq -x + 1$
 $y < 3$



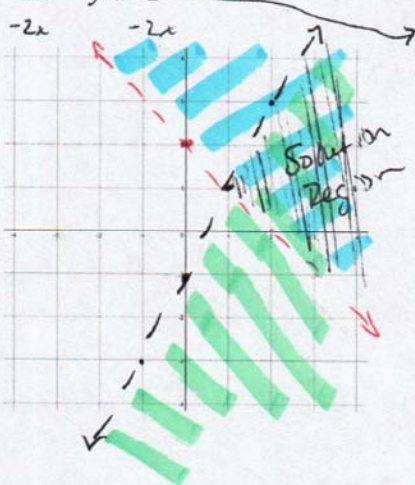
Dashed line →

Solution Region

test (0,0) $0 \leq 0 + 1$ → $0 \leq 1$ True ✓

test (0,0) $0 < 3$ true ✓

11. $x + y > 2$
 $2x - y > 1$



get into slope-intercept form
 $y > -x + 2$

$\frac{-y > -2x + 1}{-1 \quad -1 \quad -1}$

$y < 2x - 1$

Testing
 $0 > 0 + 2$ $0 > 2$ False ✗

Testing
 $0 < 0 - 1$
 $0 < -1$
 False ✗