

TH-AZ Algebra 2 Week 17

$$3x + 4y = 12$$

$$-x + 2y = 6$$

$$3x + 4y = 12$$

$$\begin{array}{r} -3x \\ -3x \end{array}$$

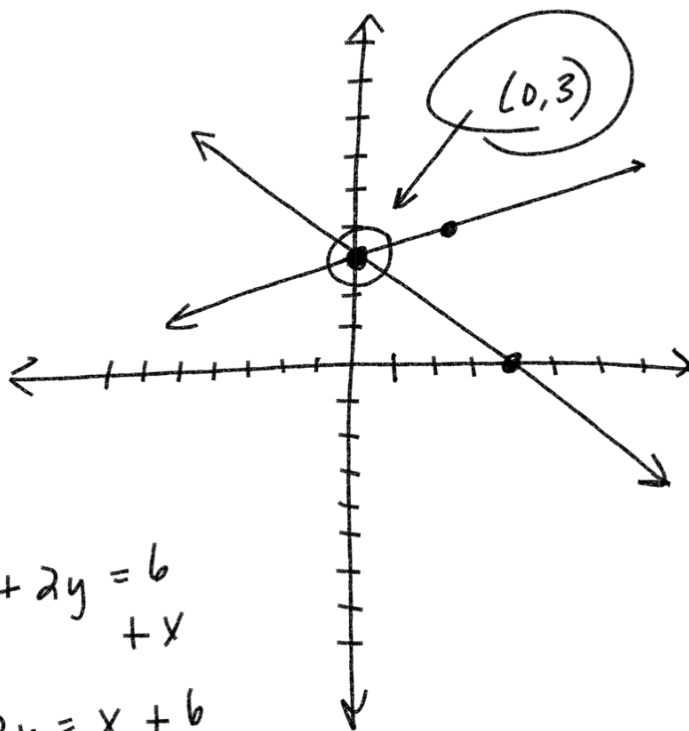
$$\frac{4y}{4} = \frac{-3x + 12}{4}$$

$$y = -\frac{3}{4}x + 3$$

$$\begin{array}{r} -x + 2y = 6 \\ +x \quad +x \end{array}$$

$$\frac{2y}{2} = \frac{x + 6}{2}$$

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



$$3x + 4y = 12$$

$$\begin{array}{r} \rightarrow -x + 2y = 6 \\ -2y \quad -2y \end{array}$$

$$-x + 2y = 6$$

$$-x + 2(3) = 6$$

$$\begin{array}{r} -x + 6 = 6 \\ -6 \quad -6 \end{array}$$

$$\begin{array}{r} -x = 0 \\ x = 0 \end{array}$$

$$\frac{-x}{-1} = \frac{-2y + 6}{-1}$$

$$x = 2y - 6$$

$$3(2y - 6) + 4y = 12$$

$$6y - 18 + 4y = 12$$

$$\begin{array}{r} 10y - 18 = 12 \\ +18 \quad +18 \end{array}$$

$$\frac{10y}{10} = \frac{30}{10}$$

$$(0, 3)$$

$$y = 3$$

$$2x + 7y = -8$$

$$-2(x - 4y = 11)$$

~~$$2x + 7y = -8$$

$$-2x + 8y = -22$$~~

$$\frac{15y}{15} = \frac{-30}{15}$$

$$y = -2$$

$$x - 4y = 11$$

$$x - 4(-2) = 11$$

$$x + 8 = 11$$

$$-8 \quad -8$$

$$x = 3$$

$$(3, -2)$$

$$y < 3x + 2$$

$$(y \leq -2x + 1)$$

$(0,0)$ true!
 $(0,0)$
 $(0,0)$

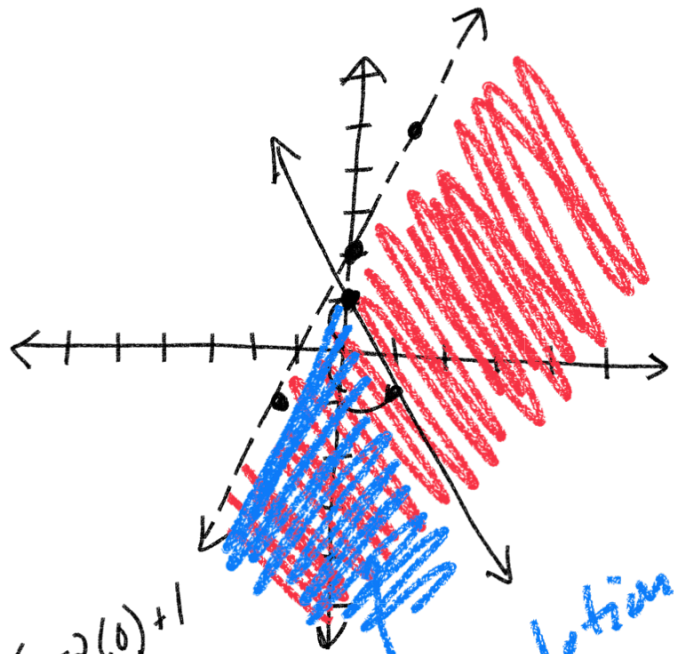
$(0,0)$

$$0 < 3(0) + 2$$

$$0 < 2$$

$$0 \leq -2(0) + 1$$

$$0 \leq 1 \text{ true}$$



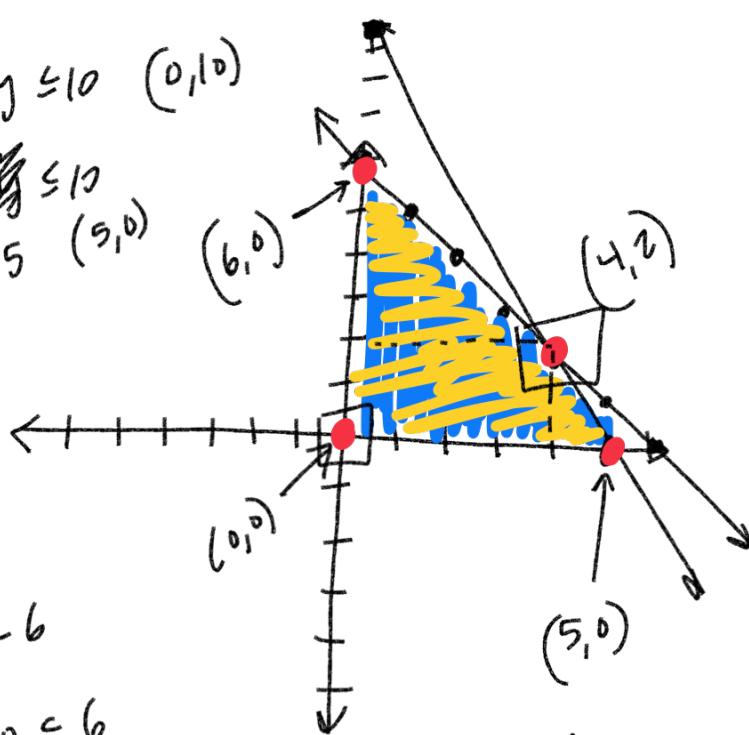
solution!

$$\begin{aligned} 4x + 2y &\leq 6 \\ 2x + y &\leq 10 \end{aligned}$$

$$\left. \begin{aligned} x &\geq 0 \\ y &\geq 0 \end{aligned} \right\} \text{Quadrant 1}$$

~~$$x + y \leq 10 \quad (0,10)$$~~
~~$$2x + y \leq 10$$~~

$$x = 5 \quad (5,0)$$



Max
 $P = 4x + y$

$$y = -x + 6$$

$$(0,0) \quad 0 + 0 \leq 6$$

$$0 \leq 6$$

$$(4,2)$$

$$\begin{array}{r} x + y = 6 \\ -2x + y = 10 \\ \hline -x = -4 \\ \underline{\quad} \\ x = 4 \end{array}$$

Max

$$4x + y = 6$$

$$\begin{array}{r} 4x + y = 6 \\ -4x + 0 = -4 \\ \hline y = 2 \quad x = 4 \end{array}$$

$$(0,0) \quad 4(0) + 0 = 0$$

$$(5,0) \quad 4(5) + 0 = 20$$

$$(0,6) \quad 4(0) + 6 = 6$$

$$(4,2) \quad 4(4) + 2 = 18$$

(5,0)

Solve and graph

$$\begin{aligned} \textcircled{1} \quad & 2x - 3y + z = -3 \\ \textcircled{2} \quad & x - 5y + 7z = -11 \\ \textcircled{3} \quad & -10x + 4y - 6z = 28 \end{aligned}$$

$$\begin{aligned} \textcircled{1} \quad & 5(2x - 3y + z = -3) \\ \textcircled{3} \quad & -10x + 4y - 6z = 28 \end{aligned}$$

$$\begin{array}{r} \cancel{10x} - 15y + 5z = -15 \\ -10x + 4y - 6z = 28 \\ \hline -11y - z = 13 \end{array}$$

$$\begin{aligned} \textcircled{1} \quad & 2x - 3y + z = -3 \\ \textcircled{2} \quad & -2(x - 5y + 7z = -11) \end{aligned}$$

$$\begin{array}{r} \cancel{2x} - 3y + z = -3 \\ -2x + 10y - 14z = 22 \\ \hline 7y - 13z = 19 \end{array}$$

$$\begin{aligned} 7y - 13z &= 19 \\ -13(-11y - z &= 13) \end{aligned}$$

$$7y - 13z = 19$$

$$\begin{aligned} 7y - 13z &= 19 \\ 143y + 13z &= -169 \end{aligned}$$

$$7(-1) - 13z = 19$$

$$\frac{150y}{150} = \frac{-150}{150} \quad \textcircled{y = -1}$$

$$\begin{array}{r} -7 - 13z = 19 \\ +7 \quad \quad +7 \end{array}$$

$$\frac{-13z = 26}{-13 \quad -13} \quad \textcircled{z = -2}$$

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

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

$$\frac{2x = -4}{2 \quad 2}$$

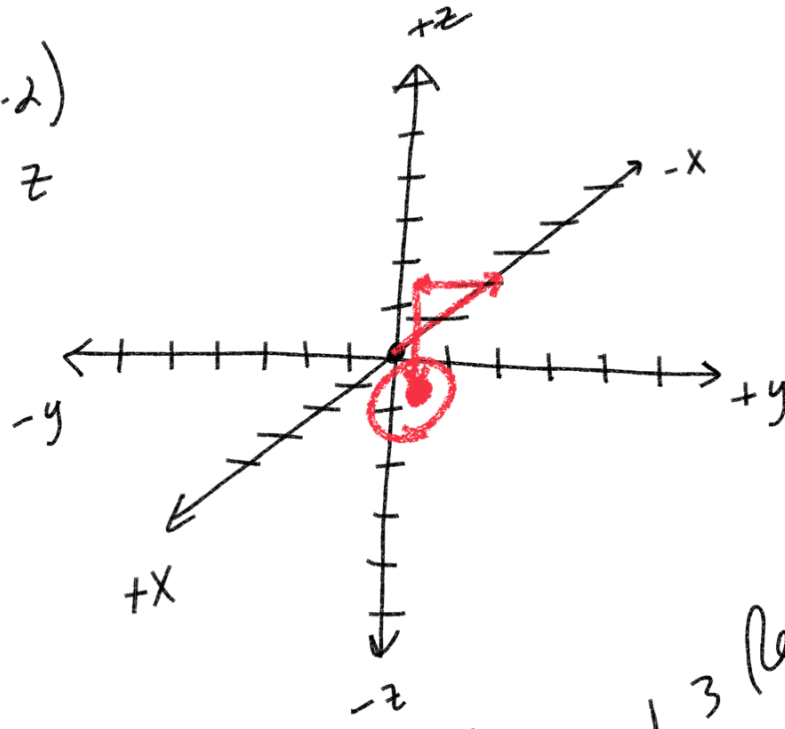
$$2x + 3 - 2 = -3$$

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

$$\textcircled{x = -2}$$

$$\boxed{(-2, -1, -2)}$$

$(-2, -1, 2)$
x y z



HW
Ch 3 Pre-Test
~~Optimal~~
No Quiz 17
Actual Ch 3 Test (Feb 4th)
HW/Quiz 15 due tonight
HW/Quiz 16 due Jan 29th