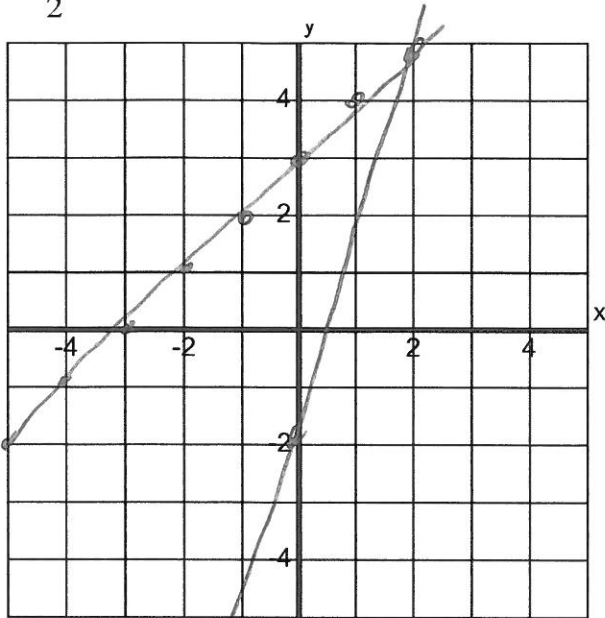


Solve the linear system by graphing

$$y = x + 3$$

$$y = \frac{7}{2}x - 2$$

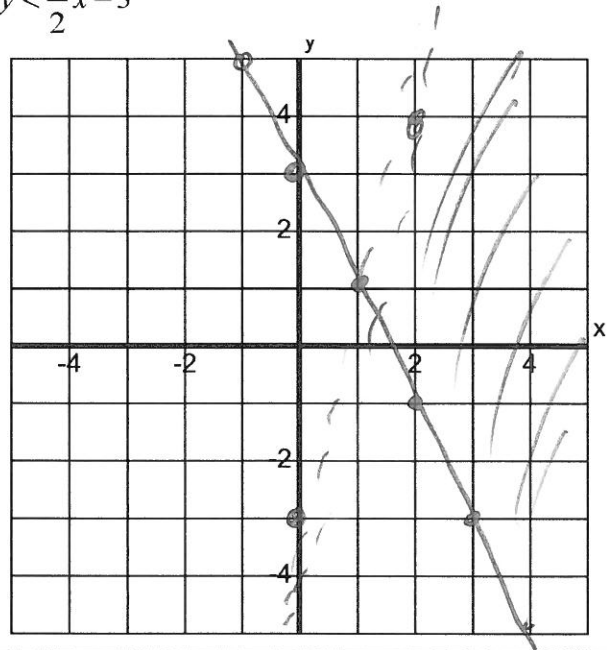
(2, 5)



Graph the system of linear inequalities

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

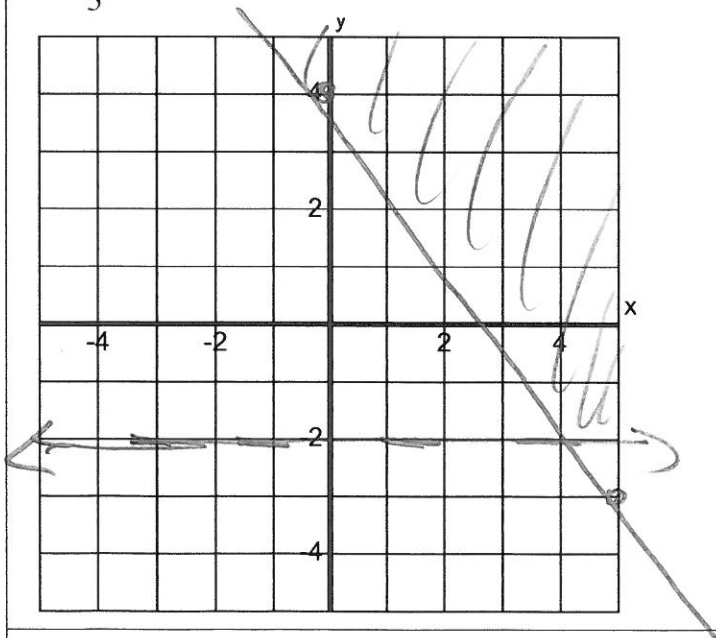
$$y < \frac{7}{2}x - 3$$



Graph the system of linear inequalities

$$y \geq -2$$

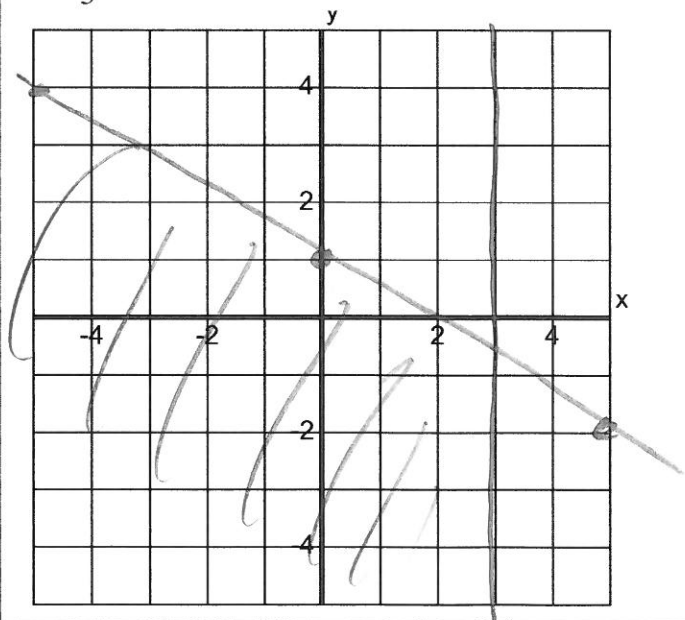
$$y \geq \frac{-7}{5}x + 4$$



Graph the system of linear inequalities

$$x \leq 3$$

$$y \leq \frac{-3}{5}x + 1$$



Solve the linear system using substitution

Classify the linear system

(consistent and independent, consistent and dependent, inconsistent)

$$y = -2x$$

$$y = 4x + 8$$

$$y = -2\left(-\frac{4}{3}\right) = \frac{8}{3}$$

$$-2x = 4x + 8$$

$$-4x + 4x$$

$$-6x = 8$$

$$\frac{-8}{-6} = \frac{-4}{3}$$

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

$$\left(-\frac{4}{3}, \frac{8}{3}\right)$$

$$-4x - 6y \leq 12 \quad y \geq -\frac{2}{3}x - 2$$

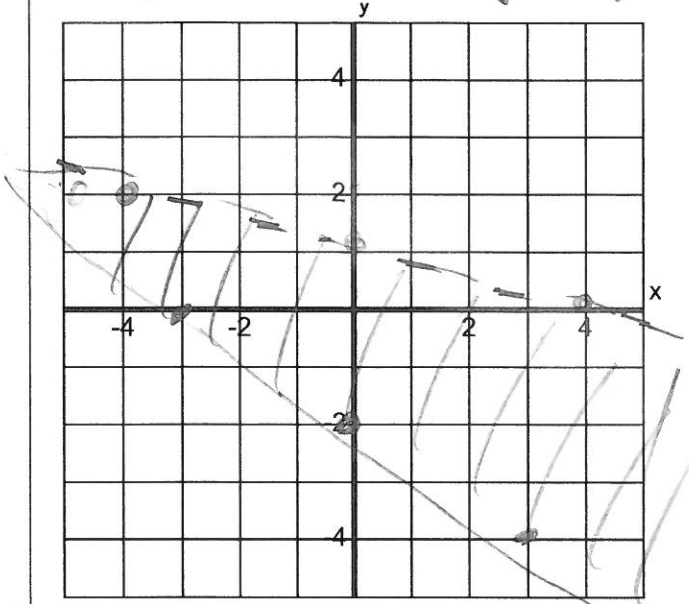
Graph the system of linear inequalities

$$2x < -8y + 8$$

$$-4x - 6y \leq 12$$

$$8y + 2x < 8$$

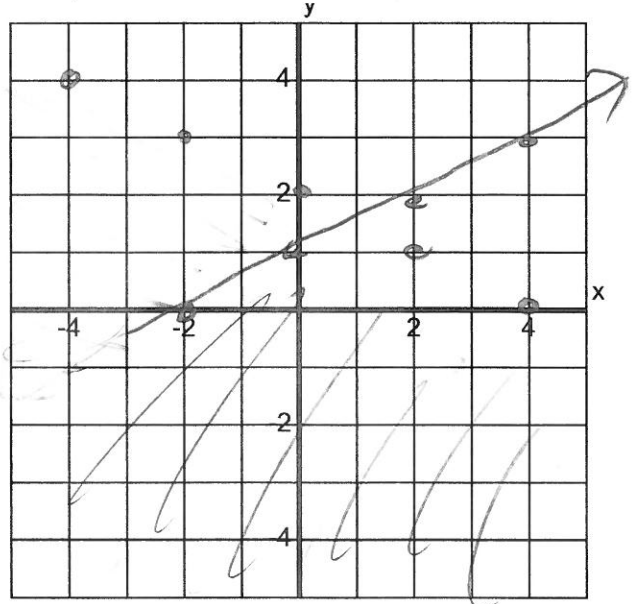
$$y < -\frac{1}{4}x + 1$$



Graph the system of linear inequalities

$$2x + 4y < 8$$

$$3x - 6y \geq -6$$



Solve the linear system using substitution

Classify the linear system

(consistent and independent, consistent and dependent, inconsistent)

$$y - 2x = 16 \rightarrow \text{Substitution}$$

$$8x - 4y = -32$$

$$y = 2x + 16$$

$$8x - 4(2x + 16) = -32$$

$$8x - 8x - 64 = -32$$

$$-64 \neq -32$$

False
Parallel lines

Elimination

$$-2x + y = 16$$

$$8x - 4y = -32$$

$$4(-2x + y = 16)$$

$$8x - 4y = -32$$

$$-8x + 4y = 64$$

$$8x - 4y = -32$$

$$0 \neq 32 \quad \text{False}$$

Solve the linear system using substitution

Classify the linear system

(consistent and independent), consistent and dependent, inconsistent)

$$2x - 2y = 16$$

$$8x - 4y = -32$$

Substitution

$$\frac{2x}{2} = \frac{2y + 16}{2}$$

$$x = y + 8$$

$$2x - 2y = 16$$

$$2x - 2(-24) = 16$$

$$2x + 48 = 16$$

$$-48 - 48$$

$$\frac{2x}{2} = \frac{-32}{2} \quad (x = -16)$$

$$8x - 4y = -32$$

$$8(y + 8) - 4y = -32$$

$$8y + 64 - 4y = -32$$

$$4y + 64 = -32$$

$$-64 - 64$$

$$4y = -96$$

$$y = -24 \leftarrow \frac{4y}{4} = \frac{-96}{4}$$

$$2(-16) - 2(-24) = 16$$

$$-32 + 48 = 16$$

$$8(-16) - 4(-24) = -32$$

$$-128 + 96 = -32$$

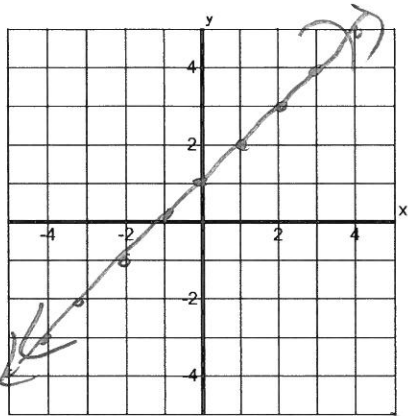
$$(-16, -24)$$

You solve a linear system and get $12=12$

Classify the linear system (consistent and independent, consistent and dependent, inconsistent)

State the number of solutions 0, 1, 2, or infinitely many

Sketch a related picture of the system



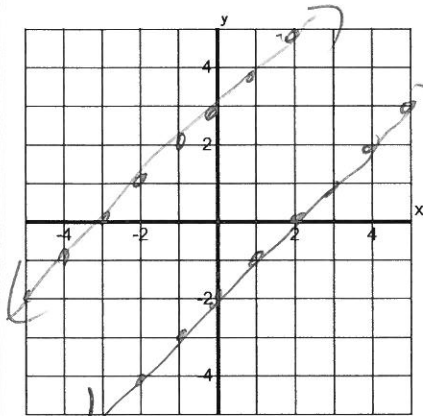
2 copies same line
 ∞ many solutions

You solve a linear system and get $9=12$

Classify the linear system (consistent and independent, consistent and dependent, inconsistent)

State the number of solutions 0, 1, 2, or infinitely many

Sketch a related picture of the system



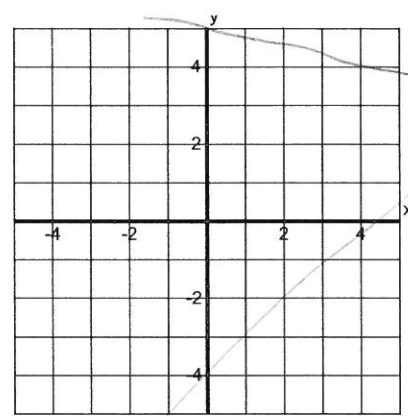
Parallel lines
0 solutions

You solve a linear system and get $x=12$

Classify the linear system (consistent and independent, consistent and dependent, inconsistent)

State the number of solutions 0, 1, 2, or infinitely many

Sketch a related picture of the system



(1, 3)

You are a travel agent and one week you sell 18 of the basic ticket packages, and 24 of all-inclusive ticket packages the total cost of which was \$7500. The next week you only sell 3 of the basic ticket packages and 72 of the all-inclusive ticket packages the total cost of which was \$14850. Let x = price of the standard ticket package, let y = price of the all-inclusive ticket package

Linear system
$$\begin{aligned} 18x + 24y &= 7500 \\ 3x + 72y &= 14850 \end{aligned}$$

$$3(x) + 72(200) = 14850$$

$$\begin{aligned} 3x + 14400 &= 14850 \\ -14400 & \\ \hline 3x &= 450 \\ \frac{3x}{3} & \\ x &= 150 \end{aligned}$$

$$-6(3x + 72y = 14850)$$

$$\begin{aligned} -18x - 432y &= -89100 \\ 18x + 24y &= 7500 \\ \hline \end{aligned}$$

$$-408y = -81600$$

$$\begin{aligned} -408y &= -81600 \\ -408 & \\ \hline y &= 200 \end{aligned}$$

The basic ticket package costs 150 per package the all-inclusive ticket package costs = 200 per package

You need to purchase oranges and apples for a fruit salad that you are taking to a party. The oranges cost \$0.50 each and the apples cost \$0.60 each. You need to bring at least one apple and at least two oranges and you have \$10 to spend. Let x = oranges Let y = apples

Write the related linear system of inequalities

$x \geq 2$

$y \geq 1$

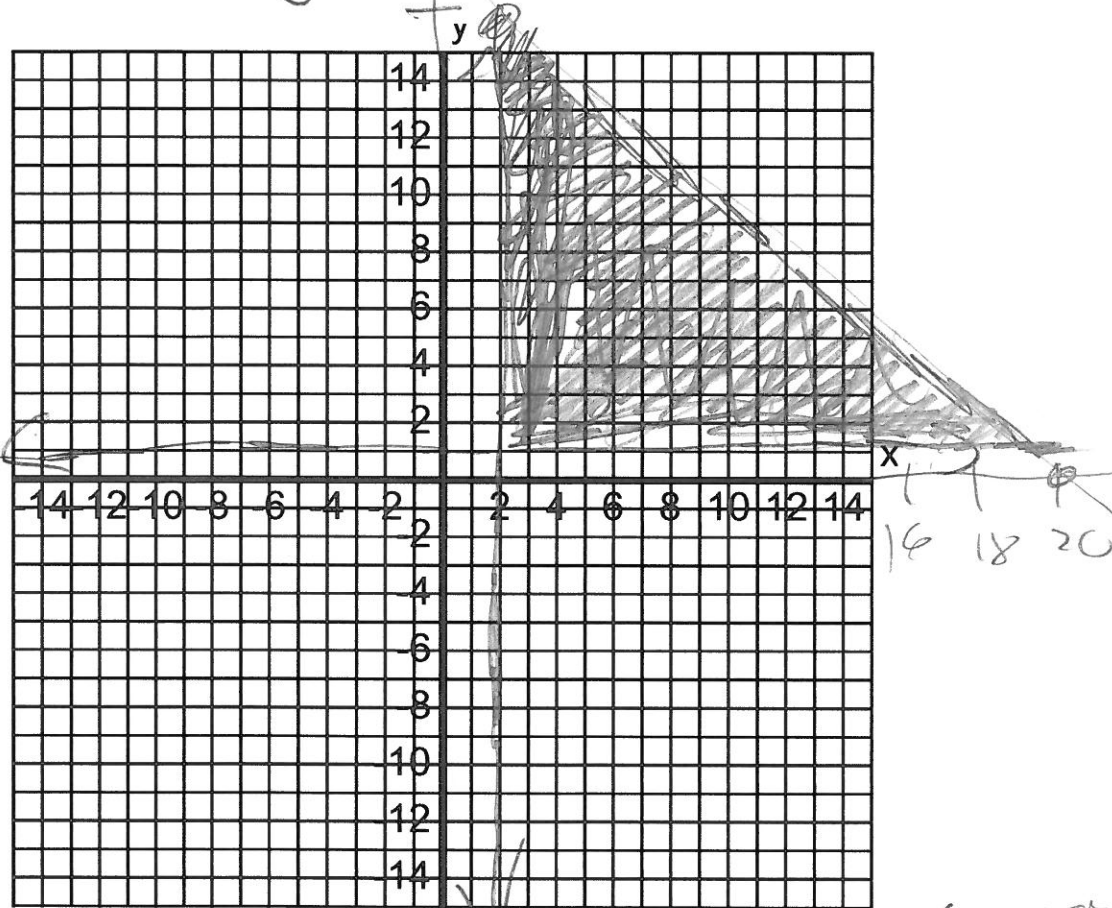
$0.5x + 0.6y \leq 10$ $\rightarrow 5x + 6y = 100$

$\frac{5x}{5} = \frac{100}{5}$

$x = 20$

$\frac{6y}{6} = \frac{100}{6}$

$y = 16.7$



State two different answers that work 2 oranges 1 apples OR 4 oranges 2 apples

If you purchased 3 oranges then you could purchase no more than 14 apples

If you purchased 4 apples then you could purchase no more than 15 oranges