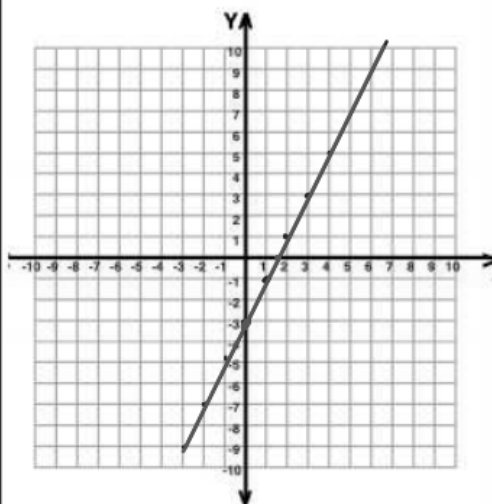


Warm
up

Solve the system by graphing: $\begin{cases} y = 2x - 3 \\ -6x + 3y = -9 \end{cases}$

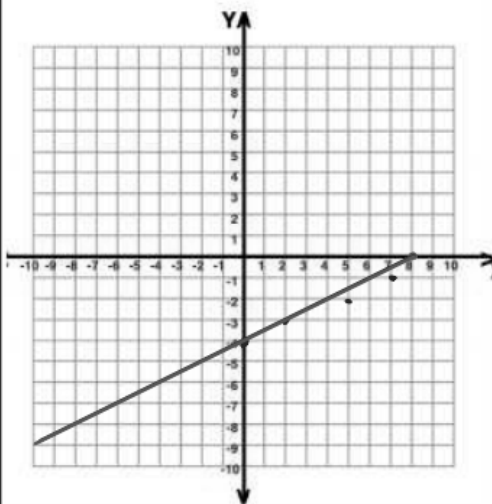


$$x = \frac{-9}{-6} = \frac{3}{2}$$

$$y = -3$$

Infinitely
many
solutions

Solve the system by graphing: $\begin{cases} y = \frac{1}{2}x - 4 \\ 2x - 4y = 16 \end{cases}$



Infinitely
many
solutions

Coinciding Lines →

Same line
Infinitely many Solutions

Determine the number of solutions of a linear system

Graph	Number of Solutions
2 Intersecting Lines	1
Parallel Lines	0
Same Line	Infinitely many Solutions

Number of Solutions of a Linear System of Equations			
Slopes	Intercepts	Types of Lines	# of Solutions
Different	NA	Intersect	1
Same	Different	Parallel	0
Same	Same	Coincide	Inf many Solutions

Consistent System

→ One solution
→ Infinitely many solutions

Inconsistent System

→ No Solution

Independent

Dependent

} Consistent

Consistent One solution

Consistent Inf many solutions

Lines	Intersecting	Parallel	Coincide
Number of Solutions	1	None	Infinitely many
Consistent/Inconsistent	Consistent	Inconsistent	Consistent
Dependent/Independent	Independent	X	Dependent

$$-\frac{A}{B}$$

Without graphing, determine the number of solutions and then classify the system of equations.

$$\begin{cases} y = 3x - 1 & \rightarrow \text{Slope } 3 & b = -1 \\ 6x - 2y = 12 & \rightarrow \text{Slope} = \frac{-6}{-2} = 3 & \text{y-inter} - 6 \end{cases}$$

Parallel

No Solution Inconsistent

Without graphing, determine the number of solutions and then classify the system of equations.

$$\begin{cases} y = -2x - 4 & \rightarrow m = -2 & b = -4 \\ 4x + 2y = 9 & \rightarrow m = -2 & b = \frac{9}{2} = 4.5 \end{cases}$$

Parallel

No Solutions
Inconsistent

Without graphing, determine the number of solutions and then classify the system of equations.

$$\begin{cases} 2x + y = -3 & \rightarrow m = -2 \\ x - 5y = 5 & \rightarrow m = \frac{1}{5} \end{cases}$$

Intersect
One Solution
consistent
Independent

Without graphing, determine the number of solutions and then classify the system of equations.

$$m = -\frac{A}{B} = \frac{-3}{-2} = \frac{3}{2}$$

$$\begin{cases} 3x - 2y = 4 & \rightarrow \frac{3}{2} & \text{y-int } -2 \\ y = \frac{3}{2}x - 2 & \rightarrow \frac{3}{2} & \text{y-int } -2 \end{cases}$$

Coincide
Infinitely many Sol
Consistent
Dependent

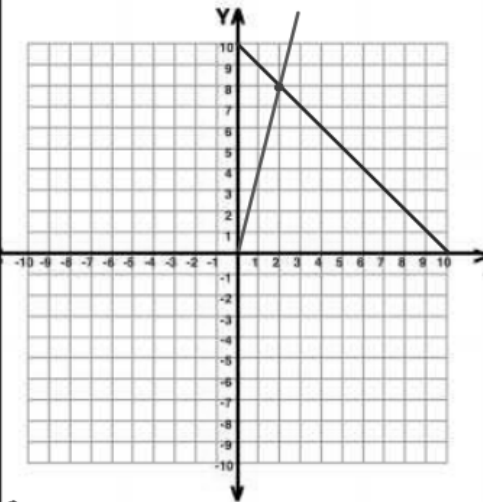
$x = \text{fruit punch}$
 $y = \text{club soda}$

$$x + y = 10$$

$$y = 4x$$

Sondra is making 10 quarts of punch from juice and club soda. The number of quarts of fruit juice is 4 times the number of quarts of club soda. How many quarts of fruit juice and how many quarts of club soda does Sondra need?

Use a graph to find the solution.



$(2,8)$

Sondra needs
2 qts Fruit Punch
8 qts Club soda

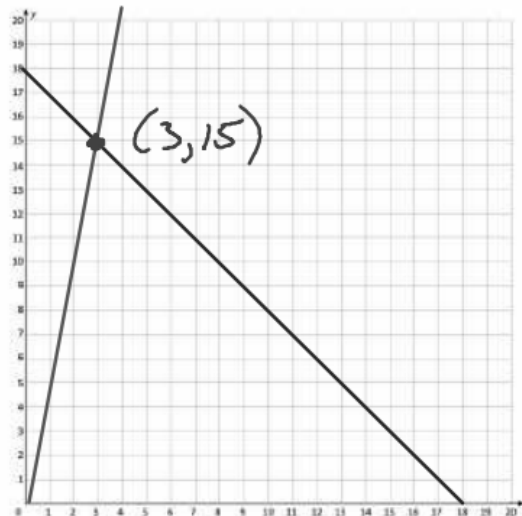
$x = \text{milk}$ $y = \text{coffee}$

$$x + y = 18$$

$$y = 5x$$

She needs
3oz of milk

Alisha is making an 18 ounce coffee beverage that is made from brewed coffee and milk. The number of ounces of brewed coffee is 5 times greater than the number of ounces of milk. How many ounces of milk does Alisha need?



$(3,15)$