

General Form of Equation

Friday, November 23, 2018 10:08 AM

Slope - intercept form of equation
 $y = mx + b$ where $m = \text{slope}$
 $b = y\text{-intercept}$

General form of equation:
 $Ax + By + C = 0$ where
 A, B, C are integers and $A \geq 0$.

Write $y = \left(\frac{3}{4}x\right) - 2$ in General form

① Get rid of fractions
② Move all terms to the same side.

$$4y = 3x - 8$$
$$\begin{array}{r} 4y \\ -4y \\ \hline 0 \end{array} = \begin{array}{r} 3x \\ -4y \\ -8 \end{array}$$

Eg $y = \left(-\frac{2}{3}x\right) + 5$

$$3y = -2x + 15$$

$+2x -15 \leftarrow$ $3x \leftarrow$ $-15 \leftarrow$

$$2x + 3y - 15 = 0$$

Try: Write in general form

① $y = -2x + 3$

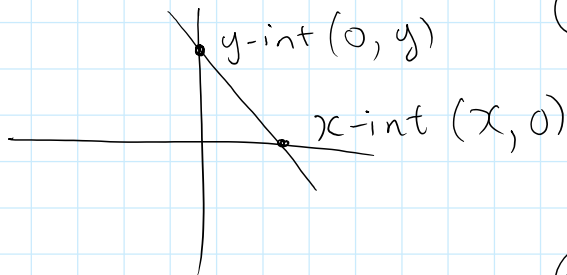
$$2x + y - 3 = 0$$

$$\begin{array}{l} x = 3 \\ 3 = x \end{array}$$

② $y = \left(\frac{1}{3}x\right) - 7$

$$3y = x - 21$$
$$x - 3y - 21 = 0$$

Graph $2x + 3y - 12 = 0$ using x & y intercepts



① y -int: Put 0 in for x , solve for y
 $2(0) + 3y - 12 = 0$

$$+ 12 \quad + 12$$

$$\frac{3y}{3} = \frac{12}{3}$$

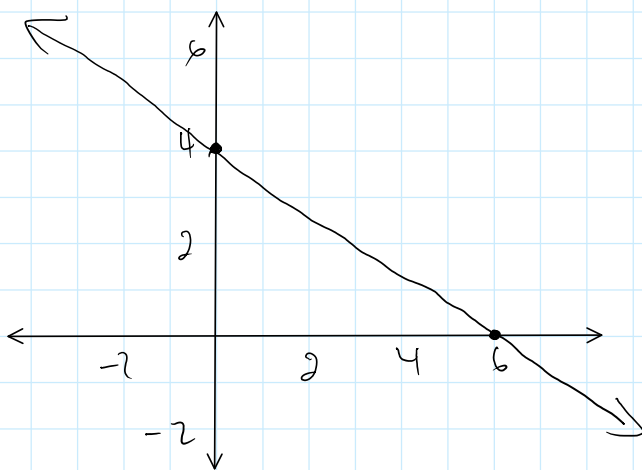
$$y = 4$$

② x int: Put 0 in for y , solve for x
 $2x + 3(0) - 12 = 0$

$$+ 12 \quad + 12$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$x = 6.$$



Try: Graph $3x - 5y + 15 = 0$ using x & y intercepts.

y -int:

$$3x - 5y = -15$$

$$3(0) - 5y = -15$$

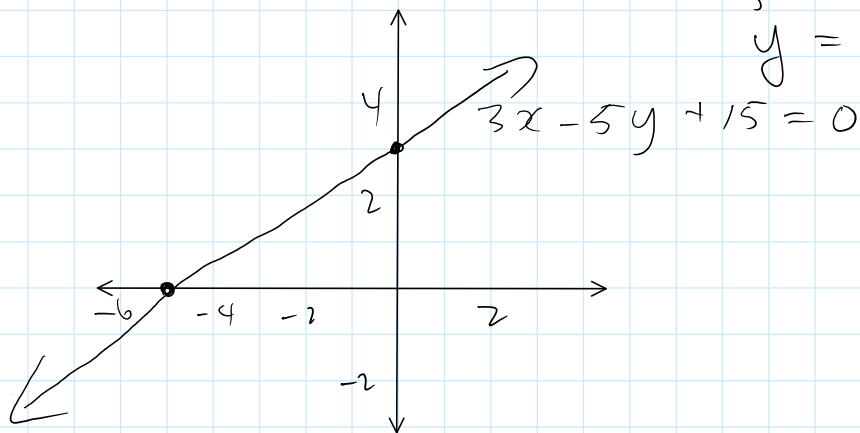
$$\frac{-5y}{-5} = \frac{-15}{-5}$$

$$y = 3$$

$$3x - 5y = -15$$

$$\frac{3x - 5(0)}{3} = \frac{-15}{3}$$

$$x = -5$$

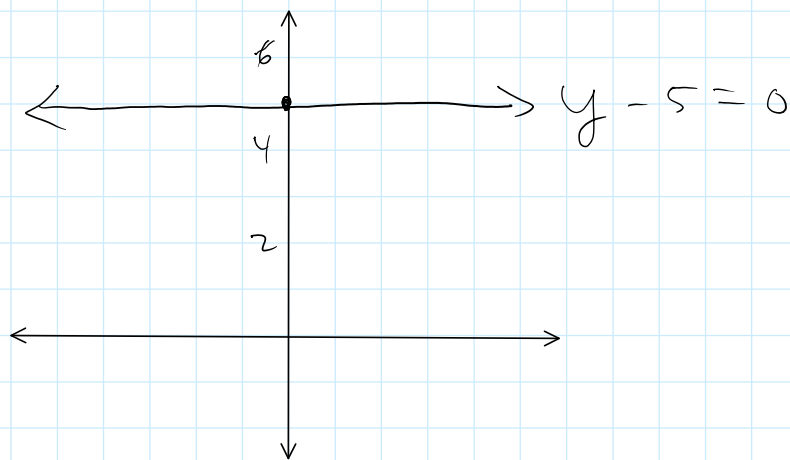


Special Cases:

eg $y - 5 = 0$
 $y = 5$

? Missing x term.

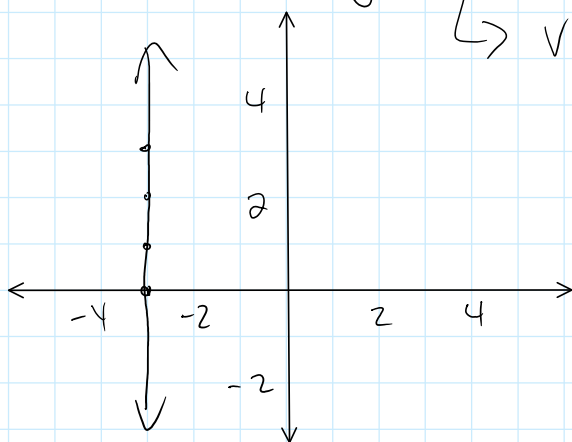
horizontal line



eg $x + 3 = 0$
 $x = -3$

Missing y -value.

↳ vertical line

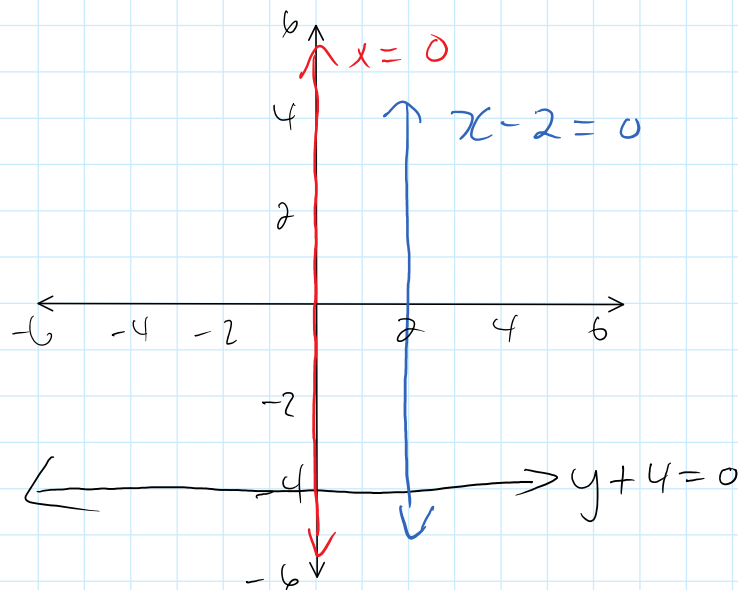


Graph:

① $y + 4 = 0$
 $y = -4$

② $x = 0$

③ $x - 2 = 0$
 $x = 2$

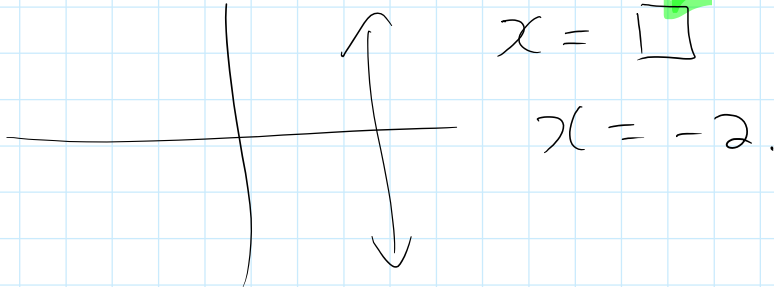


Write the equation of the following lines:

a) horizontal line with point $A(2, 3)$

a) horizontal line with point $A(2, 3)$
 $y = \square$ $y = 3$

b) line without a y-intercept with point $B(-2, 4)$



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