

1. $y = mx + b$ (Slope - intercept)

- know m → slope
- know b → yint

2. $y - y_1 = m(x - x_1)$ (point-slope)

- know m → slope
- know point → (x_1, y_1)

3. $Ax + By + C = 0$ (General)

Common skills:

- rearrange to $y = mx + b$
- solve for x & y int.
- graph it

Example 3 Determining the Slope of a Line Given Its Equation in General Form

Determine the slope of the line with this equation:

$$3x - 2y - 16 = 0$$

$$-2y - 16 = -3x + 16$$

$$\frac{-2y}{-2} = \frac{-3x + 16}{-2}$$

$$y = \frac{3}{2}x - 8$$

$m = \frac{3}{2}$
 $(0, -8)$

CHECK YOUR UNDERSTANDING

xintercept, when y is 0

$$0 = \frac{3}{2}x - 8$$

$$8 = \frac{3}{2}x$$

$$\frac{16}{3} = 3x$$

$$x = \frac{16}{3}$$

$$\left(\frac{16}{3}, 0\right)$$

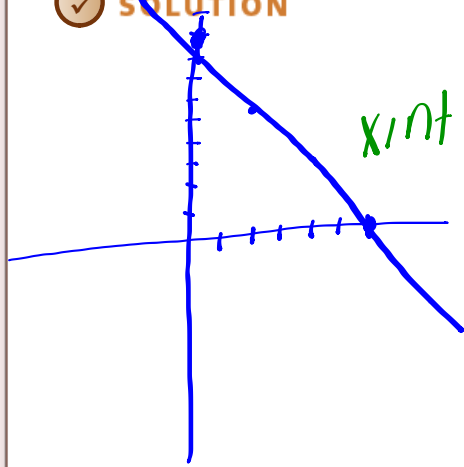
Example 2 Graphing a Line in General Form

a) Determine the x - and y -intercepts of the line whose equation is: $3x + 2y - 18 = 0$

b) Graph the line.

~~c) Verify that the graph is correct.~~

SOLUTION



$$\frac{2y}{2} = \frac{-3x + 18}{2}$$

$$y = \frac{-3x + 18}{2}$$

x int when $y = 0$

$$0 = \frac{-3x + 18}{2}$$

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

$$-18 = -3x \quad x = 6$$

$$\frac{-18}{-3} = \frac{-3x}{-3}$$

$(0, 9)$
 $(6, 0)$

CHECK YOUR UNDERSTANDING

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Classwork/Homework

4 - 9
12 - 14

18
22
24

For any that ask you to graph just find x & y intercepts
OR switch to $y = mx + b$

5. $8x - 3y = 24$

y_{int}
 $x=0$

$$8(0) - 3y = 24$$

$$0 - 3y = 24$$

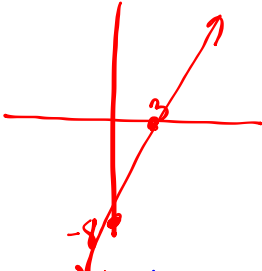
$$\frac{-3y}{-3} = \frac{24}{-3}$$

$$y = -8 \quad (0, -8)$$

x_{int}
 $y=0$

$$8x - 3(0) = 24$$

$$\frac{8x}{8} = \frac{24}{8}$$

$$x = 3 \quad (3, 0)$$


Attachments

Point slope form.docx