

Standard Form

10/20

Slope-intercept $\rightarrow y = mx + b$ Point-Slope form $\rightarrow y - y_1 = m(x - x_1)$ Standard Form $\rightarrow Ax + By = C$ \hookrightarrow "A" cannot be a Negative \hookrightarrow A, B & C, cannot be Fractions (Must Be Integers)

* If you have a Fraction - Multiply by LCD *

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Slope-intercept \rightarrow Standard Form
 $Ax + By = C$

$$\textcircled{1} \quad \begin{array}{l} y = -2x + 4 \\ +2x \quad +2x \\ \hline 2x + y = 4 \end{array}$$

$$\textcircled{3} \quad \begin{array}{l} y = -\frac{1}{2}x + 3 \\ \cdot 2 \quad \cdot 2 \\ 2y = -x + 6 \\ +x \quad +x \\ \hline x + 2y = 6 \end{array}$$

$$\textcircled{2} \quad \begin{array}{l} y = 4x - 5 \\ -4x \quad -4x \\ \hline -4x + y = -5 \\ \frac{-4x}{-1} + \frac{y}{-1} = \frac{-5}{-1} \\ \hline 4x - y = 5 \end{array}$$

$$\textcircled{4} \quad \begin{array}{l} y = \frac{2}{3}x - 1 \\ \cdot 3 \quad \cdot 3 \\ 3y = 2x - 3 \\ -2x \quad -2x \\ \hline -2x + 3y = -3 \\ \frac{-2x}{-1} + \frac{3y}{-1} = \frac{-3}{-1} \\ \hline 2x - 3y = 3 \end{array}$$

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Point-Slope \rightarrow Standard form $Ax + By = C$

Example	Steps
$(-3, -7)$ $y + 7 = -5(x + 3)$ $y + 7 = -5x - 15$ $\quad -7 \quad \quad -7$ <hr/> $y = -5x - 22$ $+5x \quad +5x$ <div style="border: 1px solid blue; padding: 5px; display: inline-block;">$5x + y = -22$</div>	<ol style="list-style-type: none"> 1. Distribute 2. Combine Constants 3. Add/Subtract the X term

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What if the slope is a fraction?

$$y + 2 = \frac{1}{4}(x - 3)$$

$$4 \cdot y + 2 = 4 \cdot \frac{1}{4}x - 4 \cdot \frac{3}{4}$$

$$4y + 8 = 1x - 3$$

$$4y = 1x - 11$$

$$-1x + 4y = -11$$

$x - 4y = 11$

OR $4 \cdot y + 2 = 4 \cdot \frac{1}{4}(x - 3)$

$$4y + 8 = 1(x - 3)$$

$$4y + 8 = x - 3$$

On own:

$$4 \cdot (y - 2) = 4 \cdot \frac{3}{4}(x - 4)$$

$$4y - 8 = -3x + 12$$

$$4y = -3x + 20$$

$3x + 4y = 20$

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