

Slope-Intercept Form: $y = mx + b$ ^{slope} $\leftarrow$ y-int

Standard Form: $Ax + By = C$

① A, B, and C values may not be fractions

② A value may not be negative

Steps:

① Use given info to calculate the slope

② Use given info to identify the y-intercept

③ Write the $y = mx + b$ form of our solution

④ Move the x term to the left side of the equation

⑤ Get rid of any fractions by multiplying both sides by all denominators

⑥ If the x-value is negative, then multiply all terms by -1 (switch all the +/- signs)

STANDARD FORM

ex slope = $-\frac{1}{2}$ y-int = 3

① $m = -\frac{1}{2}$ ② $b = 3$

③ $y = -\frac{1}{2}x + 3$

④ $y = -\frac{1}{2}x + 3$

⑤ $\frac{1}{2}x + y = 3 \cdot 2$

$1x + 2y = 6$

⑥ $x + 2y = 6$

ex slope = 3 point = $(-1, 2)$

① $m = 3$

② $y = 3x + b$ (plug in x and y values from the given point)

$2 = 3(-1) + b$

$2 = -3 + b$

$5 = b$

③ $y = 3x + 5$

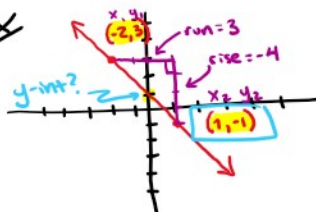
④ $y = 3x + 5$

⑤ $-3x - 3x \downarrow$

$-3x + y = 5$

⑥ $3x - y = -5$ (switch all +/- signs)

ex



① $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 3}{1 - (-2)} = -\frac{4}{3}$

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

$-1 = -\frac{4}{3}(1) + b$ $-\frac{3}{3} + \frac{4}{3}$

$-1 = -\frac{4}{3} + b$ $\frac{1}{3}$

③ $y = -\frac{4}{3}x + \frac{1}{3}$

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

⑤ $4x + 3y = 1$

⑥ $4x + 3y = 1$