

Find an equation of a line with slope -3 passing through $(-1, 5)$.

Find an equation of the line parallel to $y = -\frac{1}{2}x + 2$ passing through $(8, -3)$.

Find an equation of a line through $(-2, 7)$ with slope of -5 .

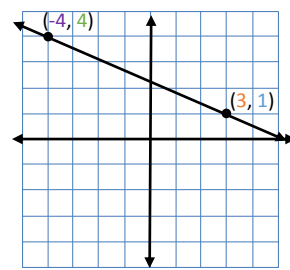
Find an equation of a line passing through $(1, 2)$ that's perpendicular to $3x - 2y = 6$.

$$\frac{\text{rise}}{\text{run}} \rightarrow \frac{\Delta y}{\Delta x}$$

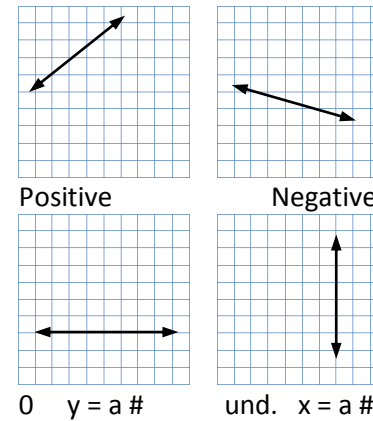
$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

$$(1, 2) (3, 4)$$

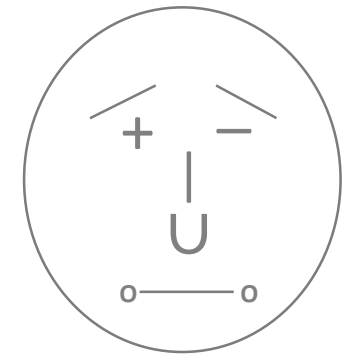
$$m = \frac{(4 - 2)}{(3 - 1)} = \frac{2}{2} = 1$$



$$m = \frac{(1 - 4)}{(3 - (-4))} = \frac{-3}{7}$$



Mr. Slope



$y = mx + b$
Equation of a line with slope m and point $(0, b)$.
Most commonly used.
If standard form $(ax + by = c)$ is given solve for y .

Find an equation of a line with slope -3 passing through $(-1, 5)$.

$$y = mx + b$$

$$5 = -3(-1) + b$$

$$5 = 3 + b$$

$$2 = b$$

$$y = -3x + 2$$

Find an equation of the line parallel to $y = -\frac{1}{2}x + 2$ passing through $(8, -3)$.

|| lines = slopes

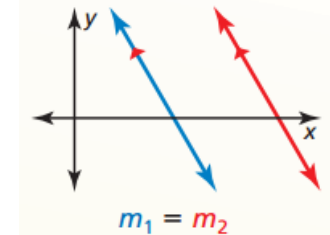
$$y = mx + b$$

$$-3 = -\frac{1}{2}(8) + b$$

$$-3 = -4 + b$$

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

In a coordinate plane, two non-vertical lines are parallel if and only if they have the same slope.



$y = m(x - x_1) + y_1$
Equation of a line with slope m and point (x_1, y_1) .

Find an equation of a line through $(-2, 7)$ with slope of -5 .

$$y = m(x - x_1) + y_1$$

$$y = -5(x - (-2)) + 7$$

$$y = -5(x + 2) + 7$$

$$y = -5x - 10 + 7$$

$$y = -5x - 3$$

Find an equation of a line perpendicular to $3x - 2y = 6$, passing through $(1, 2)$.

Solve for y

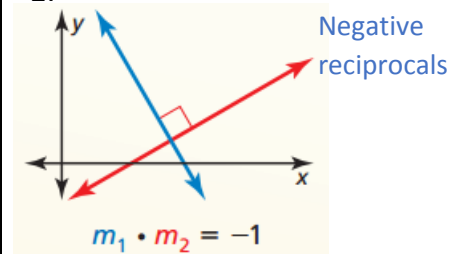
$$-2y = -3x + 6$$

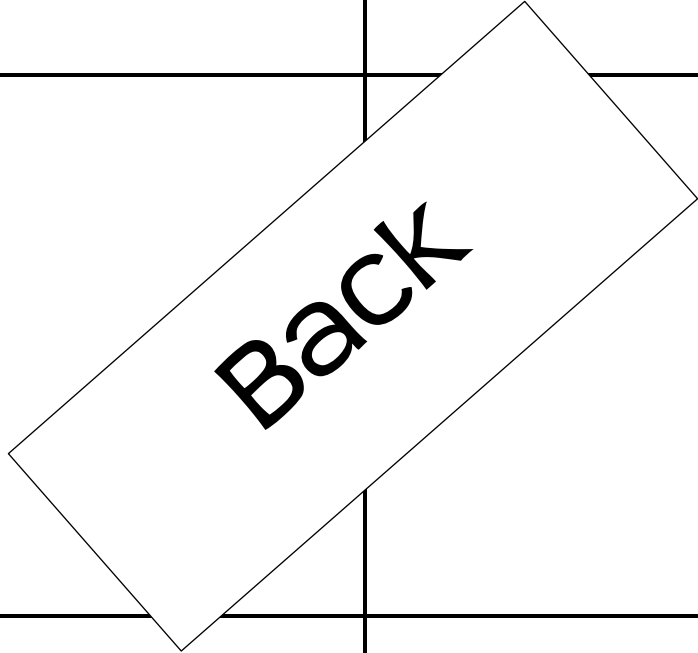
$$y = \frac{3}{2}x - 3; \quad -\frac{2}{3} \text{ is } \perp \text{ slope}$$

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

$$y = -\frac{2}{3}x + \frac{2}{3} + 2; \quad \boxed{y = -\frac{2}{3}x + 2\frac{2}{3}}$$

In a coordinate plane, two non-vertical lines are perpendicular if and only if the product of their slopes is -1 .



<p>Types of Slope</p>			<p>Slope</p>
<p> lines</p>			<p>Slope y- int.</p>
<p>⊥ lines</p>			<p>Point Slope</p>

Types
of Slope

Slope

|| lines

Back

Slope
y- int.

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Point
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