S-i $y = mx + B$

Algebra 1 4.3

Write equations of lines in point-slope form

Write linear equations in different forms

slope-intercept form

point-slope form $y - ? = m(x - ?)$ (y-coord, x-coord)

standard form

Quiz 4.1-4.2

activity: cut & paste

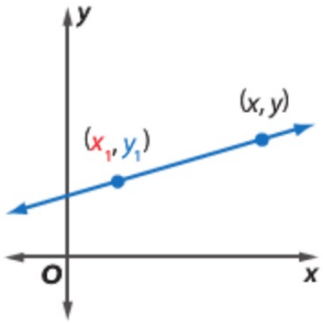
m = (y-y)/(x-x)

$y - 2 = -3(x - 5)$

KeyConcept Point-Slope Form

Words The linear equation $y - y_1 = m(x - x_1)$ is written in point-slope form, where (x_1, y_1) is a given point on a nonvertical line and m is the slope of the line.

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



Cut & paste activity

$$y - (-2) = \frac{1}{2}(x - 6)$$

$$y + 2 = \frac{1}{2}(x - 6)$$

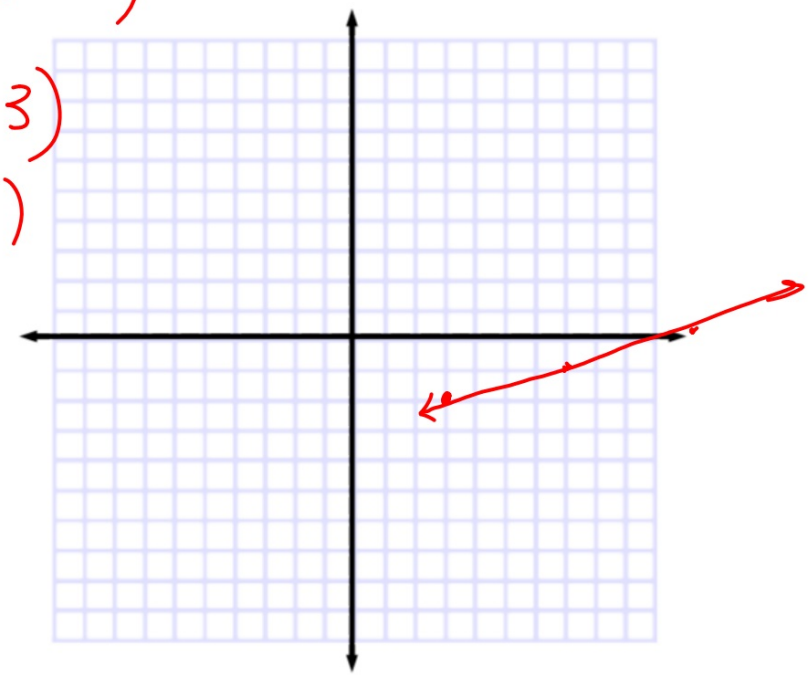
Example 1 Write and Graph an Equation in Point-Slope Form

Write an equation in point-slope form for the line that passes through (3, −2) with a slope of $\frac{1}{4}$. Then graph the equation.

$y - \quad = m(x - \quad)$

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

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

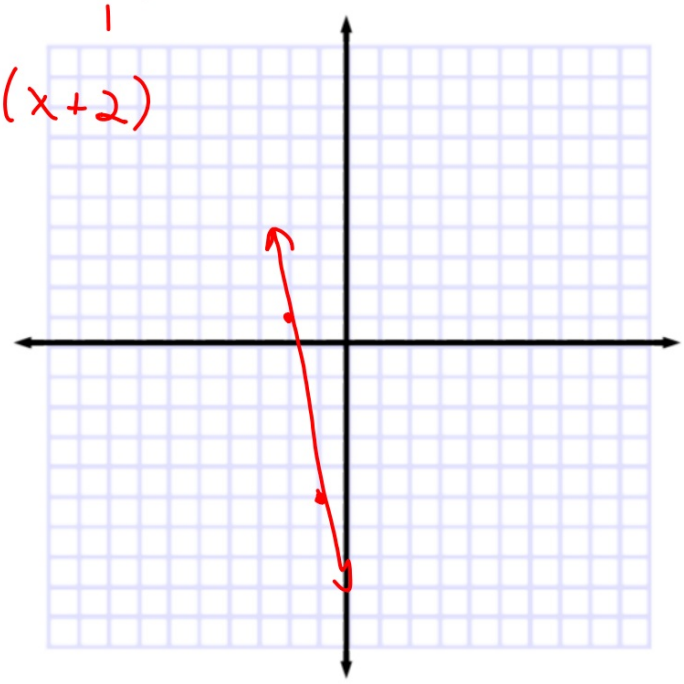


GuidedPractice $y-1=-6(x--2)$

1. Write an equation in point-slope form for the line that passes through $(-2, 1)$ with a slope of -6. Then graph the equation.

$\frac{-6}{1}$

$y-1=-6(x+2)$



$y = 5$

si $y = mx + B$

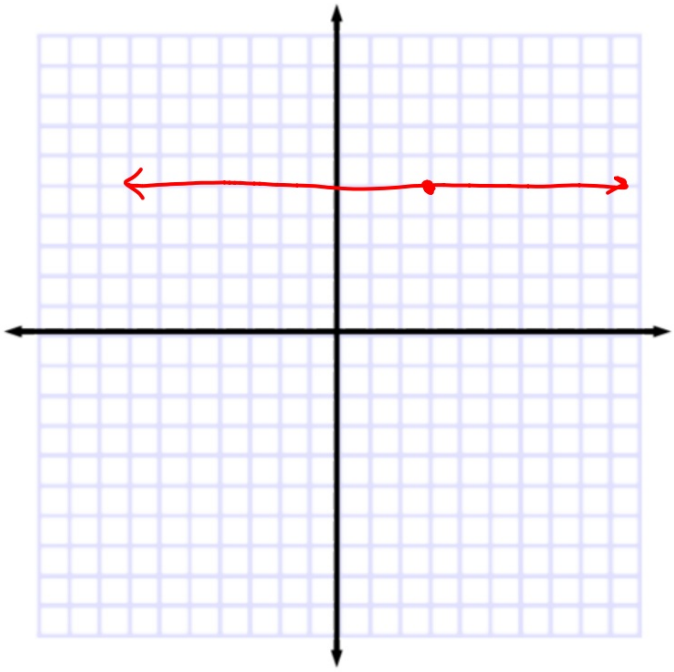
ps $y - ? = m(x - ?)$

Slope is 0 passing through (3,5)
What kind of line is it?
Graph first, then write equation (easier)

horizontal

$* \; y - 5 = 0(x - 3)$

$y - 5 = 0$
$+5 \quad +5$



Slope is undefined passing through (3,5)
What kind of line is it?