Algebra 1 4.3

Write equations of lines in point-slope form

Write linear equations in different forms

slope-intercept form $y = mx + B$

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

standard form

Quiz 4.1-4.2

activity: cut & paste

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

$y + 4 = 2(x - 4)$

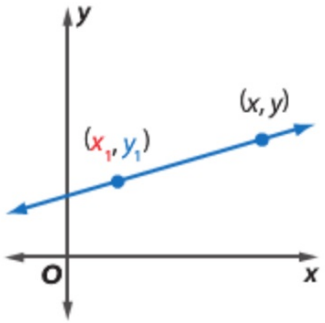
$y - y_1 = 3(x - x_1)$

$y - 5 = 3(x + 1)$

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

$(3,5)$ $m=4$

$y-5=4(x-3)$

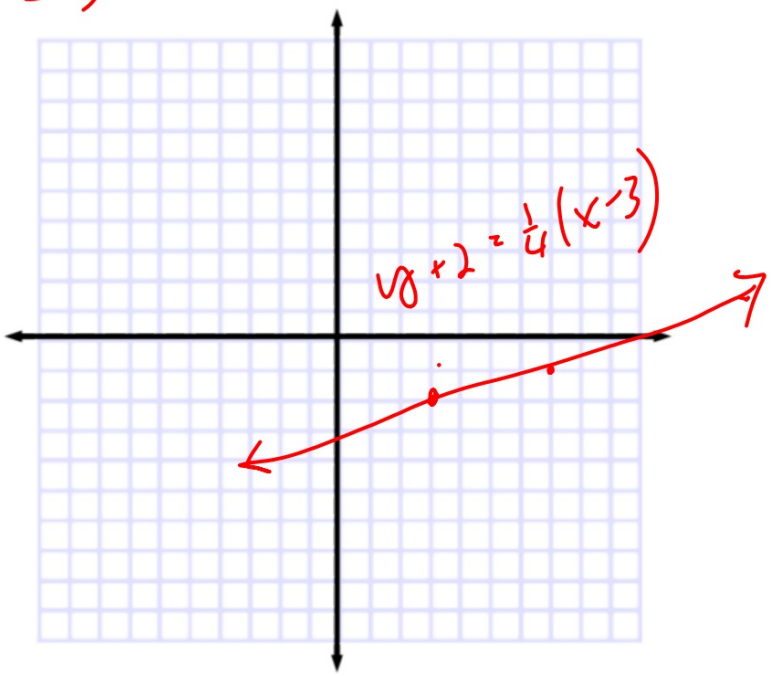
$(1,-6)$ $m=-2$

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

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

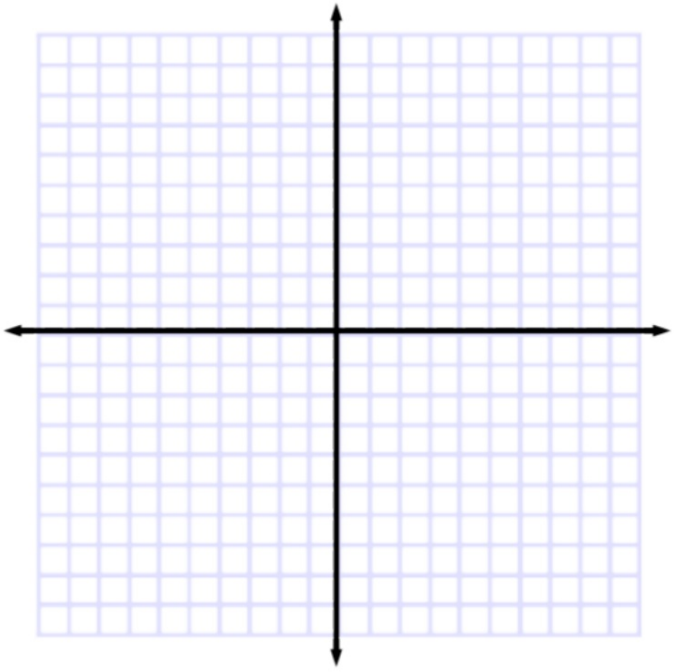
Write an equation in point-slope form for the line that passes through (3, −2) with a slope of $\frac{1}{4}$. Then graph the equation.

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

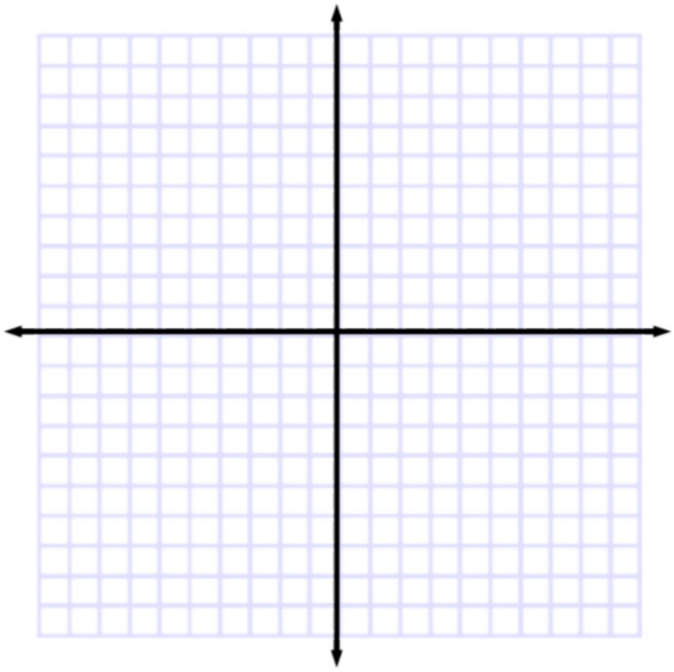


GuidedPractice

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.



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



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