

Algebra 1 4.3

Write equations of lines in point-slope form

Write linear equations in different forms

slope-intercept form

point-slope form

standard form

← skip

activity: cut & paste

$$y = mx + B$$
$$y - ? = m(x - ?)$$

Quiz 4.1-4.2

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

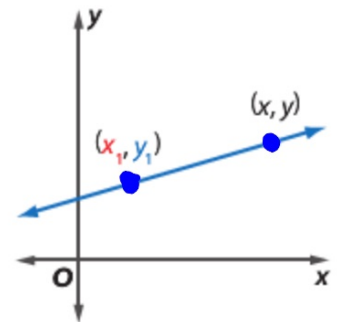
Key Concept Point-Slope Form

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

• $y - -3 = 2(x - 4)$

Point-slope $y + 3 = 2(x - 4)$

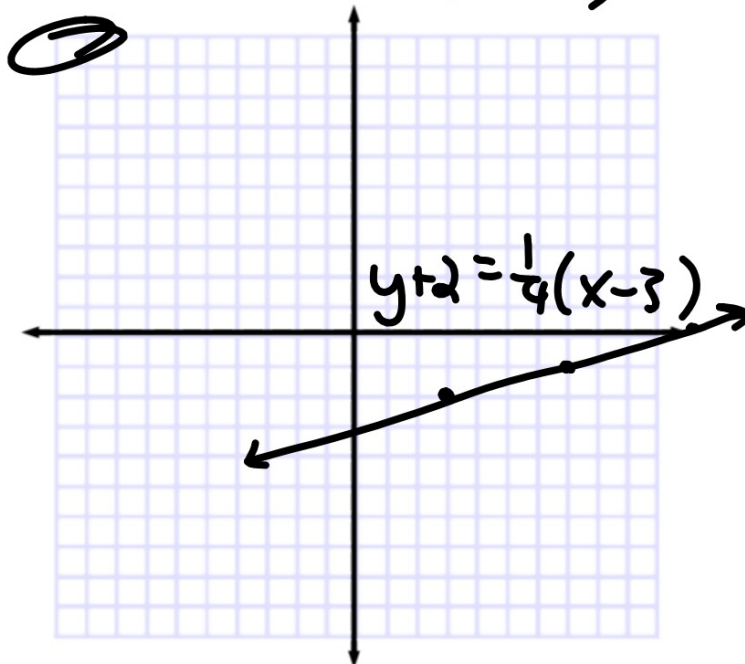
$$y - 5 = 3(x + 1)$$



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.

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

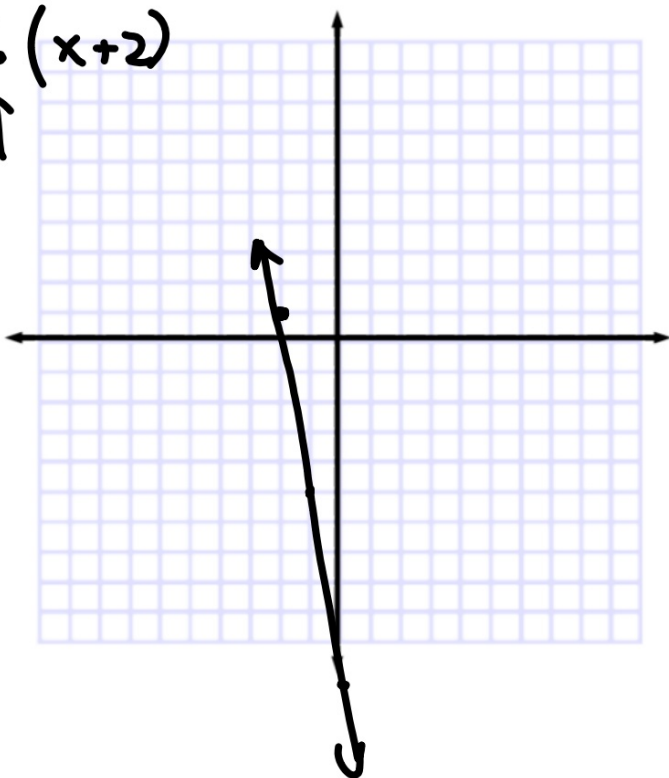


GuidedPractice

$$-\frac{6}{1}$$

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.

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



$$m=0$$

Slope is 0 passing through (3,5)

What kind of line is it?

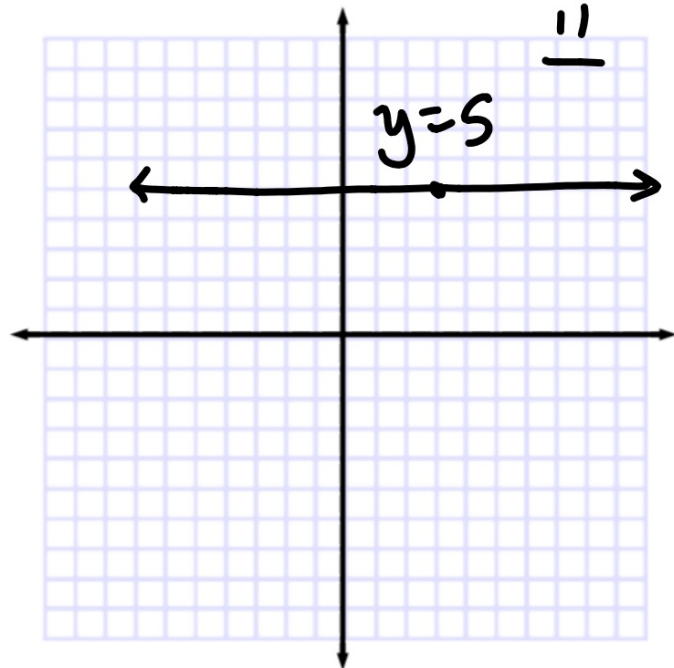
Graph first, then write equation (easier)

$$y = 0x + 5$$

$$y = 0 + 5$$

$$y = 5$$

Std Form



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

