6.3 Write Linear Equations in Point-Slope Form

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Slope-intercept

Slope

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

Point-Slope Formula

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

x y

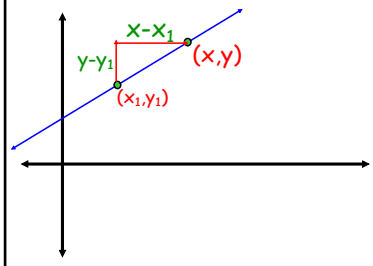
$y = mx + b$

Nov 9-8:50 PM

Key Concept

undefined no slope

The point-slope form of the equation of the nonvertical line that passes through a given point (x_1, y_1) and has a slope of m is : $y - y_1 = m(x - x_1)$.



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Write an equation in point-slope form of the line that passes through the point (4,-3) and has a slope of 2. m=2

x, y

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

$y - -3 = 2(x - 4)$

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

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Write an equation in point-slope form of the line that passes through the point (-1,4) and has a slope of -2.

(-1,4) m=-2

x, y

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

$y - 4 = -2(x - -1)$

$y - 4 = -2(x + 1)$ ☺

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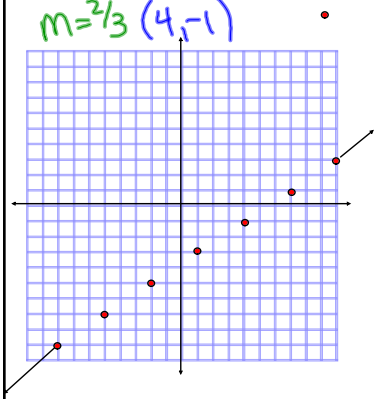
Graph the equation

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

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



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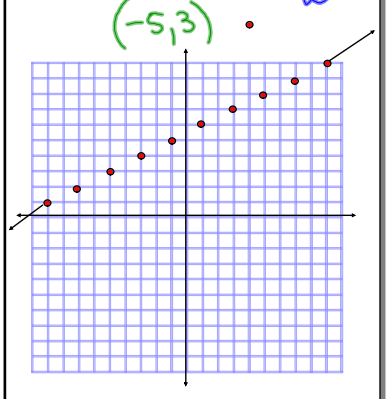
Graph the equation

$y - 3 = \frac{1}{2}(x + 5)$

$m = \frac{1}{2}$

(-5, 3)



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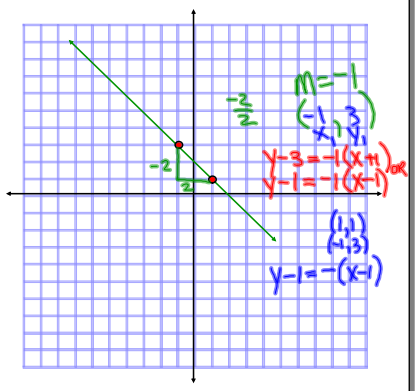
Write the equation of the given line in Point-slope form



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Write an equation in point-slope form of the line that passes through the given points.

(2,3) , (4,4)

Slope: $\frac{1}{2}$

$\frac{4-3}{4-2}=\frac{1}{2}$

$m=\frac{1}{2}$

(2,3) OR (4,4)

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

OR

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

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Write an equation in point-slope form of the line that passes through the given points.

(-1,1) , (3, 5)

Slope:

$\frac{5-1}{3-1}=\frac{4}{4}$

$m=1$

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

OR

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

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Assignment: WB 6.3 1-27 ODD

OR

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