



Point-Slope Formula

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The **point-slope equation** is another method that you can use to write the equation of a linear line.

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

This equation is useful if you are given the gradient of the line (m) and a point (x_1, y_1).

EXAMPLE: Find the equation of the line given the table below.

x	1	2	3	4
y	5	7	9	11

1) Find the gradient using two points – (1, 5) and (4, 11).

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{11 - 5}{4 - 1} = \frac{4}{3}$$

2) Use the point-slope equation and the point (1, 5).

$$y - 5 = \frac{4}{3}(x - 1)$$

$$y = \frac{4}{3}(x - 1) + 5$$

$$y = \frac{4}{3}x - \frac{4}{3} + 5$$

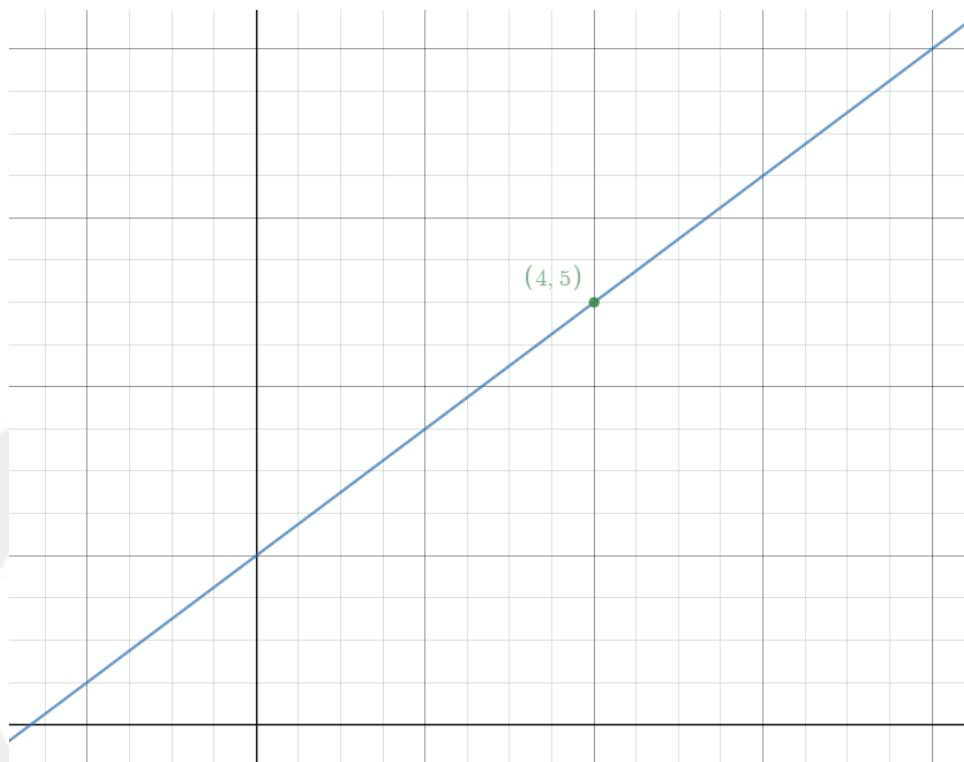
$$y = \frac{4}{3}x - \frac{4}{3} + \frac{15}{3}$$

$$y = \frac{4}{3}x + \frac{11}{3}$$



Instructions: Find the equation of the line below.

1





2

