

Equation of a Line (From 2 points)

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2. A line goes through the point $(5, -7)$ and has slope $m = -3$. Write the equation that represents the line.

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1. Find the equation of the line that passes through the points $(-3, 1)$ and $(6, 5)$.

Using the points $(-3, 1)$ and $(6, 5)$, the slope of the line is

$$m = \frac{5 - 1}{6 - (-3)}$$

$$m = \frac{4}{9}$$

$$5 = \frac{4}{9}(6) + b$$

$$5 = \frac{8}{3} + b$$

$$5 - \frac{8}{3} = \frac{8}{3} - \frac{8}{3} + b$$

$$\frac{7}{3} = b$$

The equation of the line is $y = \frac{4}{9}x + \frac{7}{3}$.

2. A line goes through the point $(5, -7)$ and has slope $m = -3$. Write the equation that represents the line.

$$-7 = -3(5) + b$$

$$-7 = -15 + b$$

$$8 = b$$

The equation of the line is $y = -3x + 8$.