

Equation of a Line (From 2 points)

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

2. Find the equation of the line that passes through the points $(-3, 7)$ and $(2, 8)$.

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Equation of a Line (From 2 points)

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

Using the points (-1, -3) and (2, -2), the slope of the line is

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

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

$$-2 = \frac{1}{3}(2) + b$$

$$-2 = \frac{2}{3} + b$$

$$-2 - \frac{2}{3} = \frac{2}{3} - \frac{2}{3} + b$$

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

The equation of the line is $y = \frac{1}{3}x - \frac{8}{3}$.

2. Find the equation of the line that passes through the points (-3, 7) and (2, 8).

Using the points (-3, 7) and (2, 8), the slope of the line is

$$m = \frac{7 - 8}{-3 - 2}$$

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

$$8 = \frac{1}{5}(2) + b$$

$$8 = \frac{2}{5} + b$$

$$8 - \frac{2}{5} = \frac{2}{5} - \frac{2}{5} + b$$

$$\frac{38}{5} = b$$

The equation of the line is $y = \frac{1}{5}x + \frac{38}{5}$.

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