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Quiz 0

Problem 1

Find the equation of a line that passes through the points $P_1(-6,-3)$ and $P_2(2,4)$.

Problem 2

Find the equation of a line that passes through the point $P_1(-6,-3)$ and has a slope 2.

Problem 3

Find the slope and the y-intercept of the equation of a line:

$$x + 3y = 0\,.$$

Problem 4

Solve for x:

$$4 = e^x\,.$$

Solutions

Problem 1

The equation of a line is $y = mx + b$ with $m = \frac{y_2 - y_1}{x_2 - x_1}$ so

$$m = \frac{4-(-3)}{2-(-6)} = \frac{7}{8}$$

and we get

$$y = \frac{7}{8}x + b\,.$$

To calculate b, we substitute either point into the equation, for example $x = 2$, $y = 4$:

$$4 = \frac{7}{8}2 + b$$

from which $b = \frac{9}{4}$. The equation of a line is then:

$$y = \frac{7}{8}x + \frac{9}{4}\,.$$