Exercise 5

Given each set of information, find a linear equation that satisfies the given conditions, if possible.

Passes through $(7, 5)$ and $(3, 17)$

Solution

Determine the slope of the line passing through these two points.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{17 - 5}{3 - 7} = \frac{12}{-4} = -3$$

Now use the point-slope formula with either of the two given points to get the equation of the line.

$$y - 5 = -3(x - 7)$$

$$y - 5 = -3x + 21$$

$$y = -3x + 26$$