

Exercise 30

For the following exercises, consider this scenario: In 2000, the moose population in a park was measured to be 6,500. By 2010, the population was measured to be 12,500. Assume the population continues to change linearly.

Find a formula for the moose population, P .

Solution

Let t be the number of years after 2000. Use the two points, $(0, 6500)$ and $(10, 12500)$, to determine the line. Find the slope first.

$$m = \frac{y_2 - y_1}{t_2 - t_1} = \frac{12500 - 6500}{10 - 0} = \frac{6000}{10} = 600$$

Then use the point-slope formula with either of the two points to get the equation of the line

$$y - 6500 = 600(t - 0)$$

$$y - 6500 = 600t$$

$$y = 600t + 6500$$