Answer on Question #55287-Math-Algebra

A piece of equipment was purchased for $10,000 and is assumed to have salvage value of $3000 in 10 years. Assuming the relationship between the value and time is linearly related, what is the average rate of change in the value over the 10 year period? Interpret the rate of change as it relates to the value over time and state your answer in sentence form using the appropriate units.

Solution

We are given two points on a line and we need to find the equation of that line. The points are (0, 10000) and (10, 3000). The slope m is equal to

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3000 - 10000}{10 - 0} = -700.$$

The average rate of change in the value over the 10 year period is equal to slope:

$$\text{average rate of change} = -700\ \$\ per\ year.$$

With every additional year salvage value decrease by $700\ \$$.