

Answer on Question #45623 – Math – Calculus

A function is given. Determine the average rate of change of the function between the given values of the variable.

$$h(t) = t^2 + 5t; t = -1, t = 5$$

Solution

Formula of the average rate of change of the function:

$$A(t) = \frac{\Delta h}{\Delta t} = \frac{h(t+\Delta t) - h(t)}{\Delta t}$$

$h(t) = t^2 + 5t$, so the average rate of change of the function $h(t)$ between $[-1, 5]$ is equal to

$$\frac{\Delta h}{\Delta t} = \frac{h(5) - h(-1)}{5 - (-1)} = \frac{5^2 + 5 \cdot 5 - ((-1)^2 + 5 \cdot (-1))}{5 - (-1)} = \frac{25 + 25 - (1 - 5)}{5 - (-1)} = \frac{54}{6} = 9$$

Answer $A(t) = 9$