Answer on Question #45622 – Math – Calculus

The average rate of change of a function f(x) = x^3 between x = 5 and x = 9 is
average rate of change =

Solution:

Definition.

The average rate of change of the function $y = f(x)$ with respect to x from $x = a$ to $x = b$ is defined as

average rate of change $= \frac{\text{change in y}}{\text{change in x}} = \frac{f(b)-f(a)}{b-a}$.

So we have function $f(x) = x^3$. Then, the average rate of change of a function $f(x) = x^3$ between $x = 5$ and $x = 9$ is average rate of change =

$$= \frac{f(9)-f(5)}{9-5} = \frac{9^3-5^3}{9-5} = \frac{729-125}{4} = \frac{604}{4} = 151.$$