

Using the Average Rate of Change of a Function formula, how do I solve $g(x)=1/x$; $x=1$, $x=a$?

Solution

The average rate of change is

$$\frac{g(b)-g(a)}{b-a} = \frac{\frac{1}{b}-\frac{1}{a}}{b-a} = \frac{a-b}{ab(b-a)} = -\frac{1}{ab} = -\frac{1}{a},$$

where $g(x) = \frac{1}{x}$, $a = a$, $b = 1$.