

Differentiation of a Function with Respect to another Function.

In this section we will discuss derivative of a function with respect to another function. Let $u = f(x)$ and $v = g(x)$ be two functions of x . Then, to find the derivative of $f(x)$ w.r.t. $g(x)$ i.e., to

find $\frac{du}{dv}$ we use the following formula $\frac{du}{dv} = \frac{du/dx}{dv/dx}$

Thus, to find the derivative of $f(x)$ w.r.t. $g(x)$ we first differentiate both w.r.t. x and then divide the derivative of $f(x)$ w.r.t. x by the derivative of $g(x)$ w.r.t. x .