

51. The function $f(x) = \tan x - x$

(a) always increases

(b) always decreases

(c) never increases

(d) sometimes increases and sometimes decreases.

Sol. (a) We have, $f(x) = \tan x - x$

$$\therefore f'(x) = \sec^2 x - 1$$

$$\Rightarrow f'(x) \geq 0, \forall x \in R$$

So, $f(x)$ always increases.