Derivative - Class XII

Related Questions with Solutions

Questions

Quetion: 01

If $y = f\left(\dfrac{3x+4}{5x+6}\right)$ and $f'(x) = \tan x^2$ then $\dfrac{dy}{dx} =$

A. $\tan x^3$

B. $-2\tan\left[\dfrac{3x+4}{5x+6}\right]^2 \cdot \dfrac{1}{(5x+6)^2}$

C. $f\left(\dfrac{3\tan x^2+4}{5\tan x^2+6}\right)\tan x^2$

D. None of these

Solutions

Solution: 01

$y = f\left(\frac{3x+4}{5x+6}\right)$

$y' = f'\left(\frac{3x+4}{5x+6}\right) \cdot \left(\frac{3x+4}{5x+6}\right)'$ [using chain rule] $y' = \tan\left[\frac{3x+4}{5x+6}\right]^2 \cdot \frac{-2}{(5x+6)^2}$

Correct Options

Answer:01

Correct Options: B