

Answer on Question #47073 – Math – Differential Calculus – Equations

Question.

If $y = \frac{5e^x}{\cos x}$ differentiate with respect to x .

A. $\frac{5e^x(\cos x + \sin x)}{(\cos x)^2}$

B. $\frac{e^x(\cos x + \sin x)}{(\cos x)^2}$

C. $\frac{5e^x(\cos x + \sin x)}{(\cos x)^3}$

D. $\frac{5e(\cos x + \sin x)}{(\cos x)^2}$

Solution.

$$y' = \frac{(5e^x)' \cos x - 5e^x(\cos x)'}{(\cos x)^2} = \frac{5e^x \cos x + 5e^x \sin x}{(\cos x)^2} = \frac{5e^x(\cos x + \sin x)}{(\cos x)^2}.$$

We applied differentiation rule for quotient.

Answer. A. $\frac{5e^x(\cos x + \sin x)}{(\cos x)^2}$