

## Answer on Question #47034 – Math – Differential Calculus | Equations

Find the  $dy/dx$ , if  $y=\sin x/\cos x$

$\sec^2 x$

$\sec 2x$

$\operatorname{cosec} x$

$\cosh x$

**Solution:**

We have if

$$y = \frac{\sin x}{\cos x} = \tan x$$

then

$$\frac{dy}{dx} = \frac{1}{(\cos x)^2}$$

Hence

$$\frac{dy}{dx} = \frac{1}{(\cos x)^2} = (\sec x)^2$$

because

$$\frac{1}{\cos x} = \sec x$$

**Answer:**  $\frac{dy}{dx} = (\sec x)^2$