

Answer on Question #50928, Math, Integral Calculus

Find $\int \sec^3 x \tan x dx$

A $\sin 2x + c$

B $\cos 2x + c$

C $\sec^3 x + c$

D $\cos 3x + c$

Answer:

$$\begin{aligned} \int \sec^3 x \cdot \tan x dx &= \int \frac{1}{\cos^3 x} \frac{\sin x}{\cos x} dx = - \int \frac{1}{\cos^4 x} d \cos x = \frac{1}{3} \frac{1}{\cos^3 x} + c \\ &= \frac{\sec^3 x}{3} + c \end{aligned}$$

The answer C is close it

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