8.6 Trig. Integrals (U-Sub) II

Wednesday, June 12, 2019 7:14 AM

ex $\int \tan^4 x \cdot \sec^2 x \, dx$

$u = \tan x$

$du = \sec^2 x \, dx$

$\frac{du}{\sec^2 x} = dx$

$\int u^4 \cancel{\sec^2 x} \frac{du}{\cancel{\sec^2 x}}$

$\frac{1}{5}u^5 + C$

$\frac{1}{5}\tan^5 x + C$

$u = \sec x$

$du = \sec x \tan x \, dx$

$\frac{du}{\sec x \tan x} = dx$

$\int \tan^{\cancel{4}\,3} x \, u^2 \frac{du}{\sec x \cdot \cancel{\tan x}}$

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ex $\int \sec^3 x \cdot \tan x \, dx$

$u = \sec x$

$du = \sec x \cdot \tan x \, dx$

$\frac{du}{\sec x \tan x} = dx$

$\int u^2 \cancel{\tan x} \frac{du}{\cancel{u} \cancel{\tan x}}$

$\int u^2 \, du \to \frac{1}{3}u^3 + C$

$\frac{1}{3}\sec^3 x + C$