Untitled.notebook February 20, 2019

$$()S_{1n}^{2}x + (os^{2}x = 1)$$

$$S_{1n}^{2}x = 1 - (os^{2}x)$$

$$(os^{2}x = 1 - S_{1n}^{2}x)$$

$$(2) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(3) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(4) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(5) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(6) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(7) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(8) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

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$$(9) \frac{S_{1n}^{2}x + (os^{2}x = 1)}{(os^{2}x)}$$

$$(os2x = 1 - 2sin^2x)$$

$$(os2x = 2(os^2x - 1)$$

$$Sin^2x = \frac{1 - (os2x)}{2}$$

$$(os^2x = 1 + (os2x)$$

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$$= \tan x - x + C$$

$$= \int \sin^3 x \, dx$$

$$= \int \sin^3 x \, \sin x \, dx$$

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$$\frac{\tan^2 x = \Lambda e c^2 x - 1}{\sin^2 x}$$

$$\frac{\sin^2 x + \frac{\cos^2 x}{\sin^2 x}}{\sin^2 x} = \frac{1}{\sin^2 x}$$

$$1 + \cot^2 x = \csc^2 x$$

$$\frac{\sin^2 x}{\sin^2 x}$$

$$1 + \cot^2 x = 2\sin x \cos x$$

$$\frac{\sin^2 x}{\sin^2 x}$$

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$$\begin{aligned}
&(\mathcal{E}x) \int sec^2 x \, dx \\
&= \tan x + C
\end{aligned}$$

$$\begin{aligned}
&(\mathcal{E}x) \int tan^2 x \, dx \\
&= \int (sec^2 x - 1) \, dx
\end{aligned}$$

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$$= \int (1 - (\cos^2 x) \sin x) dx$$

$$= \int \sin x dx - (\cos^2 x \sin x) dx$$

$$= -(\cos x) - \int (\cos^2 x \sin x) dx$$

$$u = \cos^2 x$$

$$dx = 2(\cos x) - \sin x$$

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$$u = \cos x$$

$$cu = -\sin x \, dx$$

$$= -\cos x - \left(u^{2}(-du)\right)$$

$$= -\cos x + \left(u^{3}(-du)\right)$$

$$= -\cos x + \frac{u^{3}}{3} + C$$

$$= -\cos x + \frac{\cos^3 x}{3} + C$$

$$= \left(\frac{\varepsilon_x}{3}\right) \left(\frac{\sin^5 x}{\cos^3 x} + \frac{\cos^3 x}{3}\right) dx$$

$$= \left(\frac{\sin^5 x}{\cos^3 x} + \frac{\cos^3 x}{3}\right) dx$$

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$$= \int S_{1n} S_{X} \left(1 - S_{1n}^{2} X\right) C_{01} x dx$$

$$U = S_{1n} X$$

$$du = C_{05} X dX$$

$$= \int U \left(1 - U^{2}\right) du$$

$$= \int \left(U - U^{2}\right) du$$

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$$= \frac{u^{6} - u^{8} + C}{8}$$

$$= \frac{5 \ln 6x - 5 \ln x + C}{8}$$

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$$\begin{array}{c}
\left(\sum x\right) \int_{0}^{\pi/2} \left(\cos^{2}x\right) dx \\
\sqrt{\pi/2} \left(\cos^{2}x\right) dx \\
\sqrt{1+\cos^{2}x} dx
\end{array}$$

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$$=\frac{1}{2}\left[\int_{0}^{\pi/2}\frac{1+\cos^{2}x}{1+\cos^{2}x}dx\right]$$

$$=\frac{1}{2}\left[\int_{0}^{\pi/2}\frac{1+\cos^{2}x}{2}-0\right]$$

$$=\frac{1}{2}\left[\int_{0}^{\pi/2}\frac{1+\cos^{2}x}{2}-0\right]$$

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$$=\frac{1}{2}\left(\frac{\pi}{2}+0\right)$$

$$=\frac{\pi}{4}$$

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Ex)
$$\int Sec^2 x \tan x dx$$
 $u = \tan x$
 $du = Sec^2 x dx$
 $\int u du$
 $u^2 + c = \frac{\tan^2 x}{2} + c$

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$$\frac{(\hat{\xi}x) \int \tan^4 x \, dx}{= \int \tan^2 x \, dx}$$

$$= \int (\sec^2 x - 1) \tan^2 x \, dx$$

$$\frac{(x + \tan x)}{\cos^2 x}$$

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$$= \int su^2 x \tan^2 x \, dx$$

$$- \int tan^2 x \, dx$$

$$u = tan x \quad du = sec^2 x \, dx$$

$$= \int u \, du - \int sec^2 x - 1 \, dx$$

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$$= \frac{L^3 - \tan x + x + C}{3}$$

$$= \frac{\tan^3 x - \tan x + x + C}{3}$$

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