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2007/9/10:

2007/3/8:

$$v u$$

 $d(uv) = udv + vdu$ -----(1)

$$\int \! d(uv) = uv$$

 $\int u dv = uv - \int v du$

ſ ∫udv dv vdu u dv dv u ∫vdu dv dv u u ∫udv u $\int x^2 e^x dx$ -: 1 $u = x^2 \rightarrow du = 2x dx$ $\int x^2 e^x dx$ -: $dv = e^x dx \rightarrow v = e^x$ $\int x^2 e^x dx = x^2 e^x - 2 \int x e^x dx$ u dv $\overline{\mathbf{x}^2}$ (+) $\mathbf{u} = \mathbf{x} \longrightarrow \mathbf{d}\mathbf{u} = \mathbf{d}\mathbf{x}$ $dv = e^x dx \rightarrow v = e^x$ $\int xe^x dx = xe^x - \int e^x dx$ $= xe^x - e^x + c$ 2 < (+) $\int x^2 e^x dx = x^2 e^x - 2xe^x + 2e^x + c$ $\int e^x \sin x dx$ -: -: $u = \sin x \rightarrow dx = \cos x dx$ \mathbf{x}^{2} $dv = e^x dx \rightarrow v = e^x$ $\int e^x \sin x \, dx = e^x \sin x - \int e^x \cos x \, dx \dots (1)$ e^{x} $u = \cos x \rightarrow du = -\sin x dx$ $dv = e^x dx \rightarrow v = e^x$ $\int e^{x} \cos x \ dx = e^{x} \cos x + \int e^{x} \sin x \ dx \dots (2)$ (1) (2) $\int e^x \sin x dx$ $\int e^x \sin x \, dx = e^x \sin x - e^x \cos x - \int e^x \sin x \, dx$

 $2 \int e^x \sin x \, dx = e^x \sin x - e^x \cos x + c$ $\int e^x \sin x \, dx = \frac{1}{2} (e^x \sin x - e^x \cos x) + c$

-:

u

-:

dv

u

dv u

 $\int e^x \sin x dx$

-:

-:

| | u | dv |
|-----|----------|----------------|
| | sinx (+) | e ^x |
| (-) | cosx | e ^x |
| | | e ^x |
| | - sinx | |
| | (+) | , |

 $\int e^x \sin x \ dx = e^x \sin x - e^x \cos x - \int e^x \sin x \ dx$ $2 \int e^x \sin x dx = e^x \sin x - e^x \cos x + c$ $\int e^x \sin x \ dx = \frac{1}{2} (e^x \sin x - e^x \cos x) + c$

u

dv ()

 $\int e^x \sin x dx$

∫ e^{ax}

eax sinbx dx

u

dv ()

 $u=e^{ax}$

dv= u=sinbx dv=sinbx $\int tan^{-1}x dx$

| u | dv |
|---------------------|----|
| tan ⁻¹ x | 1 |
| (+) | |
| $1/(1+x^2)$ (-) | X |

$$\int \tan^{-1}x \ dx = x \tan^{-1}x - \int x/(1+x^2) \ dx$$

= $x \tan^{-1}x - \frac{1}{2} \ln(1+x^2) + c$

tan⁻¹x x

X

2

eax

cosbx dx

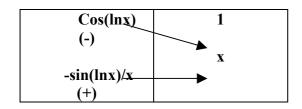
u

 $1/(1+x^2)$

dv

 $1/(1+x^2)$ x

 $x/(1+x^2)$



 $\int \sin(\ln x) dx = x\sin(\ln x) - x\cos(\ln x) - \int \sin(\ln x) dx$ $\int \sin(\ln x) dx = 1/2(x\sin(\ln x) - x\cos(\ln x)) + c$

 $u \hspace{3.5cm} dv \\$

u

dv u

. u dv $\int (Lx)^2 dx -:$

-:

 $(2\ln x)/(x)$

-:

 $\mathbf{d}\mathbf{v}$ \mathbf{u}

2lnx/x x

dv u

 $\int \sin(\ln x) dx$

-:

 u
 dv

 Sin(lnx) (+)
 1

 Cos(lnx)/x
 x

 ننقل x الم الطرف الابسر

-:

 $\int \sin^3 x \cos^2 x \, dx$

 $\begin{array}{c|cccc} u & dv \\ \hline Sin^2x & (+) & Cos^2x sinx \\ \hline 2sinx cosx & (-) & & -(cos^3x)/3 \end{array}$

 $\int \sin^3 x \cos^2 x \, dx = -1/3 \cos^3 x \sin^2 x + 2/3 \int \cos^4 x \sin x \, dx$ $\int \sin^3 x \cos^2 x \, dx = -1/3 \cos^3 x \sin^2 x - 2/15$ $\cos^5 x + c$

 $\int \sin^3 x \cos^3 x \ dx \qquad -:$

-:

-:

 $\begin{array}{c|cccc} u & dv \\ Sin^2x & (+) & Cos^3x sinx \\ \hline 2sinx cosx & (-) & -(cos^4x)/4 \end{array}$

 $\int \sin^3 x \cos^3 x \quad dx = -1/4 \quad \sin^2 x \quad \cos^4 x$ $+2/4 \int \cos^5 x \sin x \, dx$

 $\int \sin^3 x \cos^3 x \, dx = -1/4 \sin^2 x \cos^4 x - 1/12 \cos^6 x + c$

sinx -:

cosx

 $\int \sin^3 x \, dx$ -:

 $\int \tan^4 x \sec^4 x \ dx = 1/5 \tan^5 x \sec^2 x - 2/35$ $\tan^7 x + c$

 $\int \tan^3 x \sec^3 x \, dx \qquad -:$

-:

| u | dv |
|---------------------------------|------------------------------|
| $\tan^2 x$ (+) | sec ² x secx tanx |
| | |
| 2 tanx sec ² x _(-)_ | 1/3sec ³ x |

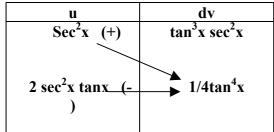
 $\int \tan^{3}x \ \sec^{3}x \ dx = 1/3 \ \tan^{2}x \ \sec^{3}x - 2/3$ $\int \sec^{4}x \ \secx \ \tanx \ dx$ $\int \tan^{3}x \ \sec^{3}x \ dx = 1/3 \ \tan^{2}x \ \sec^{3}x - 2/15$

 $sec^5x + c$

 $\int \tan^3 x \sec^4 x dx$

-:

-:



 $\int \tan^3 x \sec^4 x \, dx = 1/2 \tan^4 x \sec^2 x - \frac{1}{2}$ $\int \tan^5 x \sec^2 x dx$

 $\int \tan^3 x \ \sec^4 x \ dx = 1/2 \ \tan^4 x \ \sec^2 x - 1/12 \ \tan^6 x + c$

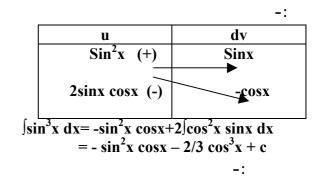
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Jcscⁿxcot^mx dx

.

 $\int \csc^4 x \cot^4 x \, dx$

 $\int_{csc}^{4} x \cot^{4} x dx = -1/5\cot^{5} x \csc^{2} x -2/5$ $\int_{cot}^{6} x \csc^{2} x dx$ $\int_{csc}^{4} x \cot^{4} x dx = -1/5\cot^{5} x \csc^{2} x +2/35$ $\cot^{7} x + c$

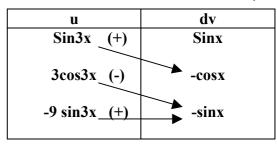


Jsinax sinbx dx

∫cosax cosbxdx ∫cosax sinbx dx

∫sinx sin3x dx

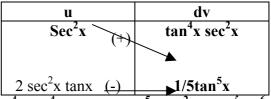
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 $\int \sin x \sin 3x \, dx = -\sin 3x \cos x + 3\cos 3x \sin x + 9 \int \sin x \sin 3x \, dx$

 $-8\sin x \sin 3x dx = -\sin 3x \cos x + 3\cos 3x \sin x + c$

\int \sinx\sin3x\dx=1/8\sin3x\cosx-3/8\cos3x \quad \sinx +c



 $\int \tan^4 x \sec^4 x dx = 1/5 \tan^5 x \sec^2 x - 2/5 \int \tan^6 x$ $\sec^2 x dx$

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[3] calculas by thomas 7th edition.

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THE DEVELOPED TABULATED METHED FOR EVALUATING INTEGRALS

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ABSTRACT: In this search we had made a developed table to solve all integrals which can be solved by parts as well as other integrals which solved by anther methoed, this table is ashort method to solve such integrals with less effort and time as well as reduction the percentage of error in the results. the 1st chapter of the search contain explain the ordinary method of integration by parts & how to evaluate the integrals. The 2nd chapter explain the tabulated method & the evaluation of integrals for function consist of "two functions multiplaction" one of them polynomial the 3rd chapter contian the developed tabulated method & how to applicate it an all integrals which soved by parts by using the developed table to evaluate the driangnometric functions integral which easier and faster from the ordinary integration method.