UNIVERSIDAD DEL SURESTE

"Pasión por educar"

REFERENCIA BIBLIOGRAFICA

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ENFERMERIA

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$$\int x e^x dx = \quad u = x \quad dv = e^x dx$$
$$du = 1 \quad v = e^x$$
$$= e^x x - \int e^x dx$$
$$= e^x x - e^x + C, \quad = e^x(x-1) + C$$

$$\int x^2 \ln x \, dx$$
$$u = \ln x \quad dv = x^2$$
$$du = \frac{1}{x} \quad v = \frac{x^3}{3}$$
$$\frac{x^3}{3}\ln x - \int \frac{x^3}{3} \cdot \frac{1}{x} dx$$
$$\frac{x^3}{3}\ln x - \int \frac{x^3}{3x} dx$$
$$\frac{x^3}{3}\ln x - \frac{1}{3}\int \frac{x^3}{x} dx$$
$$\frac{x^3}{3}\ln x - \frac{1}{3}\int x^2 dx$$
$$\frac{x^3}{3}\ln x - \frac{1}{3}\frac{x^3}{3} + C$$
$$= \frac{x^3}{3}\ln x - \frac{x^3}{9} + C$$

$$\int x^2 e^x dx = \quad u = x^2 \quad dv = e^x dx$$
$$du = 2x \quad v = e^x$$
$$= e^x x^2 - 2\int x e^x dx$$
$$- \quad u = x \quad dv = e^x$$
$$du = 1 \quad v = e^x$$
$$x^2 e^x - 2x e^x - \int e^x dx$$
$$x^2 e^x - 2x e^x - e^x + C$$

$$\int x\sqrt{x-1}\, dx$$
$$u = x \quad dv = \sqrt{(x-1)^1}\, dx = (x-1)^{1/2}$$
$$du = 1 \quad v = \frac{(x-1)^{3/2}}{3/2} = \frac{2\sqrt{(x-1)^3}}{3}$$
$$= \frac{2}{3} x \sqrt{(x-1)^3} - \frac{2}{3}\int \sqrt{(x-1)^3}\, dx$$
$$= \frac{2x}{3}\sqrt{(x-1)^3} - \frac{2}{3}\times\frac{2}{5}(x-1)^{5/2} + C$$
$$= \frac{2x}{3}\sqrt{(x-1)^3} - \frac{4}{15}\sqrt{(x-1)^5} + C$$

$\int 2x \cos 2x \, dx$

$u = 2x \quad dv = \cos 2x$

$du = 2 \quad v = \frac{1}{2} \operatorname{SEN} 2x$

$2x \cdot \frac{1}{2} \operatorname{SEN} 2x - \int \frac{1}{2} \operatorname{SEN} 2x \cdot 2$

$2x \frac{1}{2} \operatorname{SEN} 2x - \frac{1}{2} \int \operatorname{SEN} 2x \cdot 2$

$x \operatorname{SEN} 2x - \frac{1}{2} \int \operatorname{SEN} 4x \, dx$

$x \operatorname{SEN} 2x - \frac{1}{2} - \frac{1}{4} \cos 4x \, dx$

$x \operatorname{SEN} 2x - \frac{1}{8} \cos 4x \, dx$

$\int x \cos 2x \, dx$

$u = x \quad dv = \cos 2x$

$du = 1 \quad v = \frac{1}{2} \operatorname{SEN} 2x$

$x \operatorname{SEN} 2x - \frac{1}{2} \int \operatorname{SEN} 2x \, 1$

$x \operatorname{SEN} 2x - \frac{1}{2} \frac{1}{2} \cos 2x$

$x \operatorname{SEN} 2x + \frac{1}{4} \cos 2x + C$

$\int x \sec^2 3x \, dx$

$u = x \quad dv = \sec^2 3x$

$du = 1 \quad v = \frac{1}{3} \tan 3x$

$\frac{x}{3} \tan 3x - \frac{1}{3} \int \tan 3x \, dx$

$\frac{1}{3} \frac{1}{3} \ln |\sec 3x| + C$

$\frac{x}{3} \tan 3x - \frac{1}{9} \ln |\sec^2 x| + C$

$\int e^{2x} \csc x \, dx$

$u = \csc x \qquad dv = e^{2x}$

$du = -\csc x \cdot \cot x \qquad v = \frac{1}{2} e^{2x}$

$\frac{1}{2} e^{2x} \csc x - \frac{1}{2} \int e^{2x} (-\csc x \cdot \cot x) \, dx$

$= \frac{1}{2} \frac{1}{2} e^{2x} \csc x + C$

$\frac{1}{2} e^{2x} \csc x - \frac{1}{4} e^{2x} \csc x + C$

$\csc x \left(\frac{1}{2} e^{2x} - \frac{1}{4} e^{2x}\right) + C$ Factorizado

$\int e^{x/2} \cot x \, dx$

$u = \cot x \qquad dv = e^{x/2}$

$du = -\csc^2(x) \qquad v = e^{x/2}$

$= \cot e^{x/2} - \int e^{x/2} (-\csc^2 x)$

$= \cot x \, e^{x/2} + 2 e^{x/2} \cot x + C$

$\int x^2 \ln x \, dx$

$u = \ln x \qquad dv = x^2$

$du = \frac{1}{x} \qquad v = \frac{x^3}{3}$

$= \ln x \frac{x^3}{3} - \int \frac{x^3}{3} \frac{1}{x}$

$= \ln x \frac{x^3}{3} - \int \frac{x^3}{3x} \, dx$

$\frac{1}{} \ln x \frac{x^3}{3} - \frac{1}{3} \int \frac{x^2}{x} \, dx$

$\frac{x^3}{3} \ln x - \frac{1}{3} \int x^2 \, dx$

$\frac{x^3}{3} \ln x - \frac{1}{3} \frac{x^3}{3}$

$\frac{x^3}{3} \ln x - \frac{x^3}{9} + C$

$$\int x \sec^2 3x \, dx$$

$u = x \qquad dv = \sec^2 3x$

$du = 1 \qquad v = \frac{1}{3} \tan 3x$

$$\frac{x}{3} \tan 3x - \frac{1}{3} \int \tan 3x \, dx$$

$$- \frac{1}{3} \frac{1}{3} \ln |\sec 3x| + C$$

$$\frac{x}{3} \tan 3x - \frac{1}{9} \ln |\sec 3x| + C$$