UDS

Universidad Del Sureste

6to Cuatrimestre Bachillerato
Administración Recursos Humanos

MATEMATICA APLICADA

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1- $\int x^{1/2}\,dx = \frac{x^{\frac{1}{2}+1}}{\frac{1}{2}+1} = \frac{x^{3/2}}{3/2} = \frac{2x^{3/2}}{3} = \frac{2\sqrt{x^3}}{3} = \frac{2x\sqrt{x}}{3} + C$

2.- $\int (x^{-\frac{3}{2}} + x^{\frac{1}{3}} + 4)\,dx = \int x^{-\frac{3}{2}}dx + \int x^{\frac{1}{3}}dx + \int 4\,dx =$

$\frac{-x^{-\frac{3}{2}+1}}{-\frac{3}{2}+1} + \frac{x^{\frac{1}{3}+1}}{\frac{1}{3}+1} + 4x$

$\frac{x^{-\frac{1}{2}}}{-\frac{1}{2}} + \frac{x^{4/3}}{4/3} + 4x \qquad \frac{-2}{x^{1/2}} + \frac{3x^{4/3}}{4}$

$\frac{-2}{\sqrt{x}} + \frac{3\sqrt[3]{x^4}}{4} + 4x \qquad -\frac{2}{\sqrt{x}} + \frac{3x\sqrt[3]{x}}{4} + 4x + C$

3.- $\int \frac{dx}{x} = \int x^{-1}dx = \ln|x| + C$

4.-

4.- $\int \left(\frac{1}{x^2} + \frac{1}{x^3}\right)dx =$

$= \int \frac{1}{x^2}dx + \int \frac{1}{x^3}dx$

$\frac{1}{(2-1)x^{2-1}} \quad -\frac{1}{(3-1)x^{3-1}}$

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

5.- $\int (2x^2 + \sqrt{x})\, dx =$

$$\int 2x^2\, dx + \int x^{1/2}\, dx = 2\int x^2\, dx + \int x^{1/2}\, dx$$

$$= \frac{2x^3}{3} + \frac{x^{3/2}}{3/2}$$

$$= \frac{2x^3}{3} + \frac{2x^{3/2}}{3} = \frac{2x^3}{3} + \frac{2x\sqrt{x}}{3}$$

$$= \frac{2x^3 + 2x\sqrt{x}}{3} + C$$