



Instituto Tecnológico Superior Progreso

INSTITUTO TECNOLÓGICO SUPERIOR PROGRESO

ALUMNO: Eduardo Sosa Vera

CARRERA: INGENIERÍA EN SISTEMAS COMPUTACIONALES

GRUPO: 2

SEMESTRE: 2

MATERIA: Calculo Integral

DOCENTE: Abram Espinosa Pat

$$\int (2x^2 - 5x + 3) dx$$

$$\int 2x^2 dx - \int 5x dx + \int 3 dx$$

$$2 \int x^2 dx - 5 \int x dx + 3 \int dx$$

$$\frac{2x^3}{3} - \frac{5x^2}{2} + 3x + C$$

$$\frac{2}{3} x^3 - \frac{5}{2} x^2 + 3x + C$$

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

$$\int (x^{1/2} - x^{3/2}) dx$$

$$\int x^{1/2} dx - \int x^{3/2} dx$$

$$\frac{x^{3/2}}{3/2} - \frac{x^{5/2}}{5/2}$$

$$\frac{2}{3} x^{3/2} - \frac{2}{5} x^{5/2} + C$$

$$\int \left(\frac{x^3 - 5x^2 + 4}{x^2} \right) dx$$

$$\int \left(\frac{x^3}{x^2} - \frac{5x^2}{x^2} - \frac{4}{x^2} \right) dx$$

$$\int x dx - \int 5 dx - \int 4x^{-2} dx$$

$$\frac{x^2}{2} - 5x - \frac{4x^{-1}}{-1} + C$$

$$\frac{1}{2} x^2 - 5x - \frac{4}{x} + C$$

$$\int (3\sqrt{y} - y + \frac{2}{y^2}) dy = 3 \int y^{1/2} dy - \int y dy + 2 \int y^{-2} dy$$

$$3 \int y^{1/2} dy - \int y dy + 2 \int y^{-2} dy$$

$$\frac{3y^{3/2}}{3/2} - \frac{y^2}{2} + \frac{2y^{-1}}{-1} + C$$

$$2y^{3/2} - \frac{1}{2} y^2 + \frac{2}{y} + C$$

$$\int_1^3 (3y^3 - 6y^2 + 7) dy$$

$$3 \int_1^3 y^3 dy - 6 \int_1^3 y^2 dy + 7 \int_1^3 dy$$

$$\left. \frac{3y^4}{4} - \frac{6y^3}{3} + 7y \right|_1^3$$

$$\left. \frac{3}{4} y^4 - 2y^3 + 7y \right|_1^3$$

$$= 3 = \left. \frac{3}{4} (3)^4 - 2(3)^3 + 7(3) \right|_1^3 = \left. \frac{3}{4} (1)^4 - 2(1)^3 + 7(1) \right|_1^3$$

$$\frac{3}{4} (81) - 54 + 21 = \frac{243}{4} - 54 + 21$$

$$\frac{3}{4} - 2 + 7 = \frac{3}{4} - 2 + 7$$

$$\frac{11}{4} = \frac{23}{4}$$

$$\frac{11}{4} - \frac{23}{4} = -\frac{12}{4} = -\frac{3}{1}$$

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$$\int_1^2 (2x^3 - 2x^2 - 4x) dx$$

$$\int_1^2 2x^3 dx - \int_1^2 2x^2 dx - \int_1^2 4x dx$$

$$2 \int_1^2 x^3 dx - 2 \int_1^2 x^2 dx - 4 \int_1^2 x dx$$

$$\left. \frac{2x^4}{4} - \frac{2x^3}{3} - \frac{4x^2}{2} \right|_1^2$$

$$\left. 2x^4 - \frac{2}{3}x^3 - 2x^2 \right|_1^2$$

$$2x^4 - \frac{2}{3}x^3 - 2x^2 \Big|_1^2$$

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$+ = T$ $+ = \text{mg} \sin \theta$
Suma

$$\int_{-2}^{-1} \frac{t^2 + 1}{t} dt = \frac{t^2}{t} + \frac{1}{t}$$

$$\int_{-2}^{-1} T dt + \int_{-2}^{-1} T dt$$

$$\frac{T^2}{2} + \frac{T^2}{2} \Big|_{-2}^{-1}$$

$$\frac{1}{2} T^2 + \frac{1}{2} T^2 \Big|_{-2}^{-1}$$

$$= -1 = \qquad \qquad \qquad = -2 =$$

$$\frac{1}{2} (-1)^2 + \frac{1}{2} (-1)^2 \quad \Bigg| \quad \frac{1}{2} (-2)^2 + \frac{1}{2} (-2)^2$$

$$\frac{1}{2} + \frac{1}{2} \qquad \qquad \qquad \frac{3}{2} + \frac{3}{2}$$

$$\frac{2}{2} \qquad \qquad \qquad \frac{6}{2}$$

$$\frac{2}{2} - \frac{6}{2} = -\frac{4}{2} \quad \text{U}^2 \quad 0 - 2 \text{U}^2$$

$+ = T$ $+ = \text{mg} \sin \theta$
Suma

$$\int_0^2 \frac{x^2 + x + 1}{\sqrt{x}} dx$$

Sustitución y Simplificación

$$\frac{x^2}{x^{1/2}} + \frac{x}{x^{1/2}} + \frac{1}{x^{1/2}}$$

$$x^{3/2} + x^{1/2} + x^{1/2}$$

Resultado Operación

$$\int_0^2 x^{3/2} dx + \int_0^2 x^{1/2} dx + \int_0^2 x^{1/2} dx$$

$$\frac{x^{5/2}}{5/2} + \frac{x^{3/2}}{3/2} + \frac{x^{3/2}}{3/2} \Big|_0^2$$

$$\frac{2}{5} x^{5/2} + \frac{2}{3} x^{3/2} + \frac{2}{3} x^{3/2} \Big|_0^2$$

$$= 2 = \qquad \qquad \qquad = 0 =$$

$$\frac{2}{5} (2)^{5/2} + \frac{2}{3} (2)^{3/2} + \frac{2}{3} (2)^{3/2} \quad \Bigg| \quad \frac{2}{5} (0)^{5/2} + \frac{2}{3} (0)^{3/2} + \frac{2}{3} (0)^{3/2}$$

$$\frac{11}{5} + \frac{5}{3} + \frac{5}{3} \qquad \qquad \qquad 0 + 0 + 0$$

$$\frac{83}{15} - 0 = \frac{83}{15}$$