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Nombre del trabajo: Ejercicios

Materia: Matemáticas aplicadas

Grado: 6to cuatrimestre

Grupo: Técnico en administración de recursos humanos

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

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

$\frac{2x^{-1/2}}{\frac{1}{-\frac{1}{2}}} + C = \frac{-4}{\sqrt{x}} + C$

3.- $\int \frac{5}{\sqrt{x}}\,dx = \frac{\int 5}{x^{1/2}}\,dx$ $\int 5x^{-1/2}\,dx = \frac{5x^{-1/2+1}}{-\frac{1}{2}+1} + C = \frac{5x^{1/2}}{\frac{1}{\frac{1}{2}}} + C$

$10\sqrt{x} + C$

4.- $\int (2x^2 + 4x + 2)\,dx = \int 2x^2\,dx + \int 4x\,dx + \int 2\,dx$

$\frac{2x^3}{3} + \frac{4x^2}{2} + 2x + C = \frac{2x^3}{3} + 2x^2 + 2x + C$

5.- $\int 8\sqrt{x}\,dx = \int 8x^{1/2}\,dx = \frac{8x^{1/2+1}}{\frac{1}{2}+1} = \frac{8x^{3/2}}{\frac{3}{2}} = \frac{16x^{3/2}}{3}$

$16^2\sqrt{x^3} + C$

6.- $\frac{2}{\sqrt[5]{x^2}}\,dx$ $\frac{12\,dx}{x^{2/5}}$ $\int 2x^{-2/5}\,dx = \frac{2x^{-2/5+1}}{-\frac{2}{5}+1} = \frac{2x^{3/5}}{\frac{3}{5}} + C$

$\frac{10x^{3/5}}{3} + C = 10\sqrt[5]{x^3} + C$

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

8.- $\frac{\int 6}{\sqrt{x}} = \frac{6x^{-1/2+1}}{-\frac{1}{2}+1} = \frac{6x^{1/2}}{\frac{1}{2}} = 12x^{1/2} = 12\sqrt{x} + C$

9.- $\int 4(2x^3 + 2x)\,dx \quad \int 8x^3\,dx + 8x\,dx$

$\frac{8x^4}{4} + \frac{8x^2}{2} = 2x^4 + 4x^2 + C$

10.- $\int \sqrt{x^5}\,dx \quad \frac{x^{5/2+1}}{\frac{5}{2}+1} = \frac{x^{7/2}}{\frac{7}{2}} = 2x^{7/2} = 2\sqrt{x^7}$