Nombre del Alumno:

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Nombre del Maestro:

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Nombre del trabajo:

Ejercicios

Materia:

Matemática Aplicada

Grado:

Sexto Cuatrimestre

Grupo:

Único

Comitán de Domínguez, Chiapas a 21 de Mayo 2022

Soha Yamileth Guillen Flores

1. $\int \sqrt{x}\ dx = \int x^{1/2}\ dx$

$\dfrac{x^{1/2+1}}{1/2+1} = \dfrac{x^{3/2}}{3/2} = \dfrac{2x^{3/2}}{3} + C$

2. $\int \dfrac{2}{\sqrt{x^3}}\ dx = \int 2x^{-3/2}\ dx$

$\dfrac{2x^{-3/2+1}}{-3/2+1} = 2x^{-1/2}\ dx = \dfrac{4}{\sqrt{x}} + C$

3. $\int \dfrac{5}{\sqrt{x}}\ dx = 5x^{-1/2}$

$\dfrac{5x^{-1/2+1}}{-1/2+1} = \dfrac{5x^{1/2}}{\frac{1}{2}} = \dfrac{10}{\sqrt{x}} + C$

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

$\int 2x^2\ dx + \int 4x + \int 2\ dx$

$\dfrac{2x^3}{3} + \dfrac{4x^2}{2} + 2x$

$\dfrac{2x^3}{3} + 2x^2 + 2x + C$

5. $\int 8\sqrt{x}\, dx \qquad 8x^{1/2}\, dx$

$$\frac{8x^{1/2+1}}{1/2+1} = \frac{8x^{3/2}}{\frac{3}{2}} = \frac{16\sqrt[2]{x^3}}{3} \;\ast$$

6. $\int \frac{2}{5\sqrt{x^2}}\, dx \qquad 2x^{-2/5}\, dx$

$$\frac{2x^{-2/5+1}}{-2/5+1} = \frac{2x^{3/5}}{3/5} = \frac{10\sqrt[5]{x^3}}{3} \;\ast$$

7. $\int 4x^2\, dx$

$$\frac{4x^{2+1}}{2+1} = \frac{4x^3}{3} \;\ast$$

8. $\int \frac{4}{\sqrt{x}}\, dx \qquad 4x^{-1/2}\, dx$

$$\frac{4x^{-1/2+1}}{-1/2+1} = \frac{4x^{1/2}}{\frac{1}{2}} = 8\sqrt{x} \;\ast$$

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

$$8x^3+8x$$

$$\frac{8x^{3+1}}{3+1} = \frac{8x^4}{4} \cdot \quad 4x^4+8x = 2x^4$$

$$2x^4+8+C \;\ast$$

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10. $\int \sqrt{x^5} \, dx$ $x^{5/2} \, dx$

$\dfrac{x^{5/2+1}}{5/2+1} = \dfrac{x^{7/2}}{\frac{7}{2}} = \dfrac{2x\sqrt{x^7}}{7}$ *