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**Nombre del trabajo:**

**Ejercicios**

PASIÓN POR EDUCAR

**Materia: Matemáticas aplicadas**

**Grado: 6to Cuatrimestre**

**Grupo: Único**

1.  $\int \sqrt{x} dx$

2.  $\int \frac{2}{\sqrt{x^3}} dx$

3.  $\int \frac{5}{\sqrt{x}} dx$

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

5.  $\int 8\sqrt{x} dx$

6.  $\int \frac{2}{5\sqrt{x^2}} dx$

7.  $\int 4x^2 dx$

8.  $\int \frac{6}{\sqrt{x}} dx$

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

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

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

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

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 (10000)

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

$= \frac{5x^{1/2}}{\frac{1}{2}} + C$

$10\sqrt{x} + C$

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

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



$$6: \frac{2}{\sqrt{x^2}} dx \quad \frac{\int 2 dx}{x^{2/5}} \quad \int 2x^{-2/5} dx = \frac{2x^{-2/5+1}}{-\frac{2}{5}+1} = \frac{2x^{3/5}}{\frac{3}{5}} + C$$

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

$$7: \int 4x^2 \quad \frac{4x^{2+1}}{2+1} \quad \frac{4x^3}{3} + C$$

$$8: \int \frac{6}{\sqrt{x}} dx \quad \frac{6x^{-1/2+1}}{-\frac{1}{2}+1} \quad \frac{6x^{1/2}}{\frac{1}{2}} \quad \frac{12x^{1/2}}{1} \quad 12\sqrt{x} + C$$

$$9: \int 4(2x^3 + 2x) dx \quad \int 8x^3 dx + \int 8x dx$$

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

$$10: \int \sqrt{x^5} dx \quad \frac{x^{5/2+1}}{\frac{5}{2}+1} \quad \frac{x^{7/2}}{\frac{7}{2}} \quad 2x^{7/2} \quad 2\sqrt{x^7}$$