

$$x^n dx \rightarrow \frac{x^{n+1}}{n+1} + C$$

U.V

Cálculo integral

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A) $\int 3x^4 dx \rightarrow \frac{3x^{4+1}}{4+1} \rightarrow \frac{3x^5}{5} + C$ "

B) $\int 2x^7 dx \rightarrow \frac{2x^{7+1}}{7+1} \rightarrow \frac{2x^8}{8} = \frac{x^8}{4} + C$ "

C) $\int \frac{1}{x^3} dx \rightarrow \int x^{-3} dx \rightarrow \frac{x^{-3+1}}{-3+1} = \frac{x^{-2}}{-2} = -\frac{1}{2x^2} + C$ "

D) $\int \frac{1}{x^5} dx \Rightarrow \int x^{-5} dx \rightarrow \frac{x^{-5+1}}{-5+1} = \frac{x^{-4}}{-4} \rightarrow -\frac{1}{4x^4} + C$ "

E) $\int \frac{3}{5} x^6 dx \rightarrow \frac{3}{5} \int x^6 dx \rightarrow \frac{3}{5} \cdot \frac{x^{6+1}}{6+1} = \frac{3x^7}{5 \cdot 7} = \frac{3x^7}{35} + C$ "

F) $\int \frac{3}{t^5} dt \rightarrow 3 \int t^{-5} dt \rightarrow 3 \cdot \frac{t^{-5+1}}{-5+1} = \frac{3t^{-4}}{-4} = -\frac{3}{4t^4} + C = -\frac{3}{4} t^{-4} + C$ "

G) $\int 5e^{3/2} du \rightarrow 5 \cdot \frac{u^{3/2+2/2}}{3/2+2/2} = 5 \cdot \frac{u^{5/2}}{5/2} = \frac{10u^{5/2}}{5} = 2u^{5/2} + C$ "

H) $\int 10 \sqrt[3]{x^2} dx \rightarrow \int 10 x^{2/3} dx \rightarrow 10 \int x^{2/3} dx = (10) \frac{x^{2/3+3/3}}{2/3+3/3} = (10) \frac{x^{5/3}}{5/3} =$

$\frac{30x^{5/3}}{5} = 6x^{5/3} + C$ "

I) $\int \frac{2}{\sqrt[3]{x}} dx \rightarrow 2 \int \frac{1}{\sqrt[3]{x}} dx \rightarrow 2 \int \frac{1}{x^{1/3}} dx \rightarrow 2 \frac{\sqrt[3]{x^2}}{2} = \sqrt[3]{x^2}$
 $= 2 \int x^{-1/3} dx \rightarrow (2) \frac{x^{-1/3+3/3}}{-1/3+3/3} = (2) \frac{x^{2/3}}{2/3} = 6x^{2/3} + C$

$\frac{6x^{2/3}}{2} + C = 3x^{2/3} + C$

J) $\int 6t^2 \sqrt[3]{t} dt \rightarrow \int 6t^2 t^{1/3} dt = 6 \int t^{7/3} dt \rightarrow 6 \frac{t^{7/3+3/3}}{7/3+3/3} = 6 \frac{t^{10/3}}{10/3} = \frac{18t^{10/3}}{10} = \frac{9}{5} t^{10/3} + C$ "

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$$K) \int 7x^3 \sqrt{x} dx \quad \int 7x^3 x^{1/2} dx = \int 7x^{7/2} = \frac{14x^{9/2}}{9} + C$$

$$L) \int 4x^3 + x^2 dx \quad \int 4x^3 dx + \int x^2 dx = x^4 + \frac{x^3}{3} + C$$

$$M) \int 3u^5 - 2u^3 du \quad \int 3u^5 du - \int 2u^3 du = \frac{u^6}{2} - \frac{u^4}{2} = \frac{u^6 - u^4}{2} + C$$

$$N) \int y^3 (2y^2 - 4) dy \quad \int 2y^5 - y^4 dy = \int 2y^5 dy - \int y^4 dy = \frac{y^6}{3} - \frac{y^5}{5} + C$$

$$O) \int x^4 (5 - x^2) dx \quad \int 5x^4 - x^6 dx = \int 5x^4 dx - \int x^6 dx = x^5 - \frac{x^7}{7} + C$$

$$P) \int (3 - 2t + t^2) dt = 3t - \frac{2t^{1+1}}{1+1} + \frac{t^{2+1}}{2+1} = 3t - \frac{2t^2}{2} + \frac{t^3}{3} = 3t - t^2 + \frac{t^3}{3} + C$$

$$Q) \int \sqrt{x} (x+1) dx = \int x^{3/2} + x^{1/2} dx = \frac{x^{5/2}}{5/2} + \frac{x^{3/2}}{3/2} + C = \frac{2x^{5/2}}{5} + \frac{2x^{3/2}}{3} + C$$

$$R) \int (8x^4 + 4x^3 - 6x^2 - 8) dx \quad \int 8x^4 dx + \int 4x^3 dx - \int 6x^2 dx - \int 8 dx$$

$$\frac{8x^5}{5} + x^4 - 2x^3 - 8x + C //$$

$$S) \int (2 + 3x^2 - 8x^3) dx \quad \int 2 dx + \int 3x^2 dx - \int 8x^3 dx$$

$$2x + x^3 - 2x^4 + C //$$

$$T) \int \sqrt[3]{x} (x+1) dx \quad \int x^{1/3} x^{4/3} + 1$$

$$\frac{3x^{7/3}}{7} + \frac{3x^{4/3}}{4} + C //$$

$$U) \int (ax^2 + bx + c) dx \quad \int ax^2 dx + \int b x dx + \int c dx$$

$$\frac{ax^3}{3} + \frac{bx^2}{2} + C //$$

$$V) \int \left(\sqrt{x} - \frac{1}{\sqrt{x}} \right) dx \quad \int x^{1/2} - \frac{1}{x^{1/2}} dx \quad \int x^{1/2} dx - \int x^{-1/2} dx$$

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