

## INTEGRAL DEFINIDA.

$$\int_a^b f(x) dx = [F(x) + K]_a^b = (F(b) + K) - (F(a) + K) = F(b) + K - F(a) - K = F(b) - F(a)$$

$$\int f(x) dx = F(x) + K$$

Al resolver integrales definidas, no es necesario poner la constante de integración.

$$\int_0^5 (3x^2 - 4x + 1) dx = [x^3 - 2x^2 + x]_0^5 = (5^3 - 2 \cdot 5^2 + 5) - (0^3 - 2 \cdot 0^2 + 0) = 80$$

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$$a) \int_0^2 \frac{x}{\sqrt{x^2 + 1}} dx = [\sqrt{x^2 + 1}]_0^2 = (\sqrt{2^2 + 1}) - (\sqrt{0^2 + 1}) = \sqrt{5} - 1$$

$$\int \frac{x}{\sqrt{x^2 + 1}} dx = \left\{ \begin{array}{l} t = x^2 + 1 \\ dt = 2x dx \quad \frac{dt}{2} = x dx \end{array} \right\} = \int \frac{\frac{dt}{2}}{\sqrt{t}} = \int \frac{dt}{2\sqrt{t}} = \sqrt{t} = \sqrt{x^2 + 1}$$

1 b c d

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