

Atividade 1 – Integral Indefinida

Data: 23/03/22

Atividade1 (máx. dupla)

Entregar a resolução nesta folha.

1) Calcular as integrais indefinidas:

a) $\int dx =$

b) $\int x dx =$

c) $\int x^3 dx =$

d) $\int 2x^5 dx =$

e) $\int (2x)^3 2dx =$

f) $\int (3x)^2 3dx =$

g) $\int x^{-3} dx =$

h) $\int (2x^3 - \frac{x^2}{2} + 5x) dx =$

i) $\int (\frac{x^4}{3} - 3x^2 - 1) dx =$

j) $\int (x^2 + 1)^2 2x dx =$

$$k) \int \sqrt{x} dx =$$

$$l) \int \frac{dx}{\sqrt{x}} =$$

$$m) \int \frac{dx}{x^2} =$$

$$n) \int (x + \sqrt{x}) dx =$$

$$o) \int \frac{x^4 + x^2 - 5}{x^2} dx =$$

$$p) \int \frac{x^2 + 2x}{x} dx =$$

$$q) \int \frac{x^5 + 2x - 5}{x^4} dx =$$

$$r) \int (2y^3 - 5y^{-1/2} + 7y^{2/3}) dy =$$

$$s) \int (et^{-3} - 5t^{1/2} + 10t^{-1}) dt =$$

$$t) \int (\sin x + \cos x - 3e^x - 3\ln 2) dx =$$

Fórmulas de Integração Básica

$$\int dx = \int 1 dx = x + c$$

$$\int x^n dx = \frac{x^{n+1}}{n+1} + c \quad n \neq -1, n \text{ racional}$$

$$\int \operatorname{sen} x \, dx = -\cos x + c$$

$$\int \cos x \, dx = \operatorname{sen} x + c$$

$$\int \sec^2 x \, dx = \operatorname{tg} x + c$$

$$\int \operatorname{cosec}^2 x \, dx = -\cot g x + c$$

$$\int \sec x \operatorname{tg} x \, dx = \sec x + c$$

$$\int \operatorname{cosec} x \cot g x \, dx = -\operatorname{cosec} x + c$$

$$\int e^{kx} \, dx = \frac{1}{k} e^{kx} + c$$

$$\int \frac{1}{x} dx = \ln x + c, \quad x > 0$$

$$\int \frac{1}{\sqrt{a^2 - x^2}} dx = \operatorname{arcsen} \frac{x}{a} + c$$

$$\int \frac{1}{a^2 + x^2} dx = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + c$$

$$\int \frac{1}{x\sqrt{x^2 - a^2}} dx = \frac{1}{a} \operatorname{arcsec} \frac{x}{a} + c$$

$$\int a^x \, dx = \left(\frac{1}{\ln a} \right) a^x + c \quad a > 0, a \neq -1$$