

NOME: Victor Kist

1- Determine as seguintes integrais indefinidas

$$1) \int x^3 dx = \frac{x^4}{4} + c$$

$$2) \int \sqrt{x^3} dx = \sqrt{3}x\sqrt{x} - \frac{\sqrt{x^3}}{\sqrt{3}} + c$$

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

$$4) \int 7 dx = 7x + c$$

$$5) \int 4x^{-5} dx = 4. \int x^{-5} dx = -\frac{1}{x^4} + c$$

2- Resolva as integrais usando substituição de variável

$$1) \int \sin(2x) dx =$$

$$\int \sin(u) \frac{1}{2} du \rightarrow \frac{1}{2}(-\cos(u)) \rightarrow -\frac{1}{2}\cos(2x) + c$$

$$2) \int e^{x^2+2x+3} \cdot (2x+2) dx =$$

$$\int e^{x^2+2x+3} (2x+2) dx \rightarrow 2 \int e^{x^2+2x+3} (x+1) dx \rightarrow x^2+2x+3=u \rightarrow \int e^u du = e^u$$

$$\rightarrow 2 \int e^u \frac{1}{2} du \rightarrow 2 \cdot \frac{1}{2} \cdot e^u du \rightarrow 1 \cdot e^u \rightarrow e^{x^2+2x+3} + c$$

$$3) \int (x^2 + 2)^9 \cdot 2x dx =$$

4) $\int \cos(3x) dx =$