

<b>SIGLA</b>	CDI
<b>DISCIPLINA</b>	Cálculo Diferencial e Integral
<b>CURSO</b>	EAM

**LISTA 5 – Revisão de Derivadas e Integrais**

**- Calcule as Derivadas a seguir:**

$$1) f(x) = -\frac{1}{2}x^4 + \frac{2}{3}x^3 - \frac{1}{2}x^2 + \frac{1}{4}$$

$$f'(x) = -2x^3 + 2x^2 - x$$

$$2) f(x) = x^2 + \sqrt{x}$$

$$f'(x) = 2x + \frac{1}{2\sqrt{x}}$$

$$3) f(x) = x^3 \cos x$$

$$f'(x) = 3x^2 \cos x - x^3 \operatorname{sen} x$$

$$4) f(x) = x^3(2x^2 - 3x)$$

$$f'(x) = 10x^4 - 12x^3$$

$$5) f(x) = \frac{2x+5}{4x}$$

$$f'(x) = -\frac{5}{4x^2}$$

$$6) f(x) = \left(\frac{2}{5}\right)^x$$

$$f'(x) = \left(\frac{2}{5}\right)^x \ln \frac{2}{5}$$

$$7) f(x) = 2^{3x-1}$$

$$f'(x) = 2^{3x-1} \cdot 3 \ln 2$$

$$8) f(x) = 3^x$$

$$f'(x) = 3^x \ln 3$$

- Calcule as integrais abaixo:

$$1) \int 6x^2 - 8x + 3$$

$$2) \int 1 - x^3 + 5x^5 - 3x^7$$

$$3) \int 5x^{\frac{1}{4}} - 7x^{\frac{3}{4}}$$

$$4) \int 6\sqrt{x} - \sqrt[6]{x}$$

$$5) \int \frac{10}{x^9}$$

$$6) \int \frac{u^4 + 3\sqrt{u}}{u^2}$$

$$7) \int \cos x - 5\sin x$$

$$8) \int 2x + 5(1 - x^2)^{-\frac{1}{2}}$$

$$9) \int 4 + x^2 - 5x^3$$

$$10) \int x^{20} + 4x^{10} + 8$$

$$11) \int 3e^x + 7 \sec^2 x$$

$$12) \int \frac{\sin x}{\cos^2 x}$$