Cálculo **Exercícios - Folha 5**

1. Determine as seguintes primitivas:

$$1) \int (x^2 - 4x + \frac{5}{x})\, dx \quad 2) \int \frac{2x+1}{x^2+x+3}\, dx \quad 3) \int \frac{3}{2x-1}\, dx$$

$$4) \int \frac{1}{x}\cos(\ln x)\, dx \qquad 5) \int \frac{\sqrt{1+2\ln x}}{x}\, dx \quad 6) \int \operatorname{sen} x \cos^4 x\, dx$$

2. Recorrendo à primitivação por partes, determine as seguintes primitivas:

$$1) \int x \operatorname{sen} 2x\, dx \quad 2) \int (2x^2 - 1)e^x\, dx \quad 3) \int \operatorname{arctg} x\, dx$$

3. Recorde que $\cos^2 x = \dfrac{\cos 2x + 1}{2}$ e determine $\displaystyle\int \cos^2 x\, dx$.

4. Determine as primitivas seguintes :

$$1) \int \ln x\, dx \qquad 2) \int \frac{e^{\operatorname{arctg} x}}{1+x^2}\, dx \qquad 3) \int \frac{-3}{x(\ln x)^3}\, dx$$

$$4) \int -3x^2 \cos x\, dx \quad 5) \int \frac{\operatorname{sen} x}{\sqrt{1+\cos x}}\, dx \quad 6) \int \operatorname{arcsen} x\, dx$$