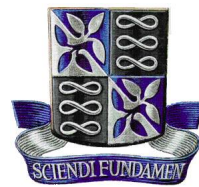




Universidade Federal da Bahia
Instituto de Matemática
Departamento de Matemática-UFBA



Lista 6- Cálculo A

Professora Vanessa Barros

Integrais indefinidas, primitivas, método da
substituição, integração de funções trigonométricas

Exercício 1

Encontre as primitivas:

(a) $\int (x^6 - 2x^3 + 3x - 8)dx$

(c) $\int (x^3 \sqrt{x})dx$

(b) $\int 2(\cos(x) + \operatorname{sen}(x))dx$

(d) $\int (\sqrt{2x})dx$

Exercício 2

Use o método da substituição para calcular as integrais abaixo:

(a) $\int_1^2 \frac{2x+1}{(x^2+x+1)^3} dx$

(j) $\int_{\pi/4}^{\pi/2} \frac{\cos x}{\operatorname{sen} x} dx$

(b) $\int_2^3 (x^3 - 2)^{1/7} (x^2) dx$

(k) $\int_{\pi/4}^{\pi/2} \frac{\cos x}{3 - \operatorname{sen} x} dx$

(c) $\int_{-1}^0 \frac{1}{x^2 - 4x + 4} dx$

(l) $\int_{\pi/5}^{\pi/10} \operatorname{sen}(5x - \pi) dx$

(d) $\int_0^{\pi/4} \frac{\operatorname{sen} x}{\cos x} dx$

(m) $\int_0^1 \frac{e^x}{e^x + 4} dx$

(e) $\int_0^{\pi/4} \frac{\operatorname{sen} x}{\cos^5 x} dx$

(n) $\int_0^{1/2} (10x^4 - 2)e^{1-2x+2x^5} dx$

(f) $\int_0^1 (5x)\sqrt{4 - 3x^2} dx$

(o) $\int_0^{\pi/2} \frac{2 + \cos x}{\sqrt{2x + \operatorname{sen} x + 1}} dx$

(g) $\int_0^1 \sqrt{3x^4 + x^2} dx$

(p) $\int_0^{\pi/4} x\sqrt{1 - x^2} dx$

(h) $\int_1^2 \frac{\ln(x^2)}{x} dx$

(q) $\int_0^{\sqrt{\pi/3}} x \operatorname{sen}(x^2) dx$

(i) $\int_2^3 \frac{1}{x \ln(x)} dx$

Exercício 3

Calcule as integrais abaixo:

(a) $\int_0^{\pi/6} \cos^3(x) \operatorname{sen}^2(x) dx$

(b) $\int_{\pi/4}^{\pi/2} \sin^3(x) dx$