UNIVERSIDADE FEDERAL DA GRANDE DOURADOS
Cálculo Diferencial e Integral II — Lista 3
Prof. Adriano Barbosa

(1) Resolva as integrais utilizando as substituições dadas:

(a) $\displaystyle\int x^3(2+x^4)^5\ dx,\ u = 2+x^4$

(b) $\displaystyle\int \cos^3\theta\ \operatorname{sen}\theta\ d\theta,\ u = \cos\theta$

(c) $\displaystyle\int \frac{\sec^2(1/x)}{x^2}\ dx,\ u = 1/x$

(2) Resolva as integrais indefinidas:

(a) $\displaystyle\int (x+1)\sqrt{2x+x^2}\ dx$

(b) $\displaystyle\int \frac{a+bx^2}{\sqrt{3ax+bx^3}}\ dx$

(c) $\displaystyle\int \sec^2\theta\ \operatorname{tg}^3\theta\ d\theta$

(d) $\displaystyle\int \sqrt{x}\ \operatorname{sen}(1+x^{3/2})\ dx$

(e) $\displaystyle\int x(2x+5)^8\ dx$

(3) Resolva as integrais definidas:

(a) $\displaystyle\int_0^1 (3t-1)^{50}\ dt$

(b) $\displaystyle\int_0^{\pi/2} \cos x\ \operatorname{sen}(\operatorname{sen} x)\ dx$

(c) $\displaystyle\int_0^a x\sqrt{x^2+a^2}\ dx\ (a>0)$

(d) $\displaystyle\int_0^4 \frac{x}{\sqrt{1+2x}}\ dx$