



UNIVERSIDADE FEDERAL DA GRANDE DOURADOS
Cálculo Diferencial e Integral II — Lista 1
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(1) Resolva as integrais utilizando as substituições dadas:

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

(b) $\int \cos^3 \theta \sin \theta d\theta, u = \cos \theta$

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

(2) Resolva as integrais indefinidas:

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

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

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

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

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

(3) Resolva as integrais definidas:

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

(b) $\int_0^{\pi/2} \cos x \sin(\sin x) dx$

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

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