

## UNIVERSIDADE FEDERAL DA GRANDE DOURADOS

## Cálculo 2 — Lista 4 Prof. Adriano Barbosa

(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) 
$$\int_{-\infty}^{\infty} \frac{\sec^2(1/x)}{x^2} dx$$
,  $u = 1/x$ 

(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) 
$$\int \sec^2 \theta \ \tan^3 \theta \ d\theta$$

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

(c) 
$$\int_0^{3a} x\sqrt{x^2 + a^2} \, dx \, (a > 0)$$

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