

MAT 1352 - CÁLC. PARA FUNÇÕES DE UMA VAR. II
2º SEMESTRE 2013

LISTA 2

1. Determine as seguintes primitivas:

- | | |
|--|--|
| (a) $\int \operatorname{tg}^2 x \, dx;$ | (n) $\int x^2 e^{x^3} \, dx;$ |
| (b) $\int \frac{7}{x+2} \, dx;$ | (o) $\int e^x \sqrt[3]{1+e^x} \, dx;$ |
| (c) $\int \frac{\operatorname{sen}^3 x}{\sqrt{\cos x}} \, dx;$ | (p) $\int \frac{\operatorname{sen} \sqrt{x}}{\sqrt{x}} \, dx;$ |
| (d) $\int \frac{x}{1+x^2} \, dx;$ | (q) $\int \frac{e^{\operatorname{arctg} x}}{1+x^2} \, dx.$ |
| (e) $\int \frac{x}{1+x^4} \, dx;$ | (r) $\int 2x (x+1)^{2014} \, dx;$ |
| (f) $\int \frac{x^2}{1+x^2} \, dx;$ | (s) $\int x^{-2} \ln x \, dx;$ |
| (g) $\int x \sqrt{1-x^2} \, dx;$ | (t) $\int x \operatorname{arctg} x \, dx;$ |
| (h) $\int \frac{1}{x \sqrt{1+\ln x}} \, dx;$ | (u) $\int \operatorname{arcsen} x \, dx;$ |
| (i) $\int x^2 \sqrt[5]{x^3+1} \, dx;$ | (v) $\int \operatorname{sen}^2 \theta \, d\theta;$ |
| (j) $\int \frac{4x+8}{2x^2+8x+20} \, dx;$ | (w) $\int \ln(x + \sqrt{1+x^2}) \, dx;$ |
| (k) $\int \frac{\sqrt{\ln x}}{x} \, dx;$ | (x) $\int \sqrt{t} \ln t \, dt;$ |
| (l) $\int \frac{e^x}{1+e^x} \, dx;$ | (y) $\int \frac{\ln(x+1)}{x^2} \, dx;$ |
| (m) $\int \frac{\operatorname{sen} 2x}{1+\cos^2 x} \, dx;$ | (z) $\int x^5 e^{-x^3} \, dx.$ |

2. Calcule as seguintes integrais definidas:

- | | |
|--|--|
| (a) $\int_0^1 \frac{3}{2x+1} \, dx;$ | (i) $\int_0^1 \frac{x}{1+x^4} \, dx;$ |
| (b) $\int_0^{\pi/3} \operatorname{sen}^4 x \cos x \, dx;$ | (j) $\int_{-3/2}^{-1} (2x+3)^{100} \, dx;$ |
| (c) $\int_1^2 \frac{x}{1+3x^2} \, dx;$ | (k) $\int_0^1 t e^t \, dt;$ |
| (d) $\int_0^1 \frac{t}{\sqrt[4]{1+t^2}} \, dt;$ | (l) $\int_2^1 \ln x \, dx;$ |
| (e) $\int_0^1 \frac{x^3}{\sqrt[4]{1+x^2}} \, dx;$ | (m) $\int_0^{\pi/2} e^x \cos x \, dx;$ |
| (f) $\int_0^{\sqrt{\pi}} x \operatorname{sen}(3x^2) \, dx;$ | (n) $\int_0^{\pi} x \sec^2 x \, dx;$ |
| (g) $\int_0^{\pi/6} \frac{\operatorname{sen} \theta}{\cos^2 \theta} \, d\theta;$ | (o) $\int_1^{e^2} x (\ln x)^2 \, dx;$ |
| (h) $\int_0^1 x e^{-x^2} \, dx;$ | (p) $\int_0^{\pi/2} \theta^3 \cos(\theta^2) \, d\theta.$ |