Universidade Veiga de Almeida

Curso: Básico das Engenhrarias

Disciplina: Cálculo Diferencial e Integral I

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Respostas da 10^a Lista de Exercícios

Exercício 1:

(a) $\int \frac{dx}{3x+2} = \frac{1}{3} ln|3x+2| + c$

(b) $\int \frac{dx}{ax+b} = \frac{1}{a} ln|ax+b| + c$

(c) $\int (5x-3)^2 dx = \frac{(5x-3)^3}{15} + c$

(d) $\int \frac{x^2 dx}{cos^2(x^3)} = \frac{1}{3} tg(x^3) + c$

(e) $\int xe^{(2x^2+1)} dx = \frac{1}{4} e^{(2x^2+1)} + c$

(f) $\int x\sqrt{x^2+1} dx = \frac{1}{3}(x^2+1)^{3/2} + c$

(g) $\int \frac{lnxdx}{x} = \frac{(lnx)^2}{2} + c$

(h) $\int \frac{arctgxdx}{1+x^2} = \frac{(arctgx)^2}{2} + c$

(i) $\int xcos(x^2) dx = \frac{sen(x^2)}{2} + c$

(j) $\int \frac{sec^2 x dx}{\sqrt{1+2tgx}} = \sqrt{1+2tgx} + c$

(k) $\int \frac{sen\sqrt{x}dx}{\sqrt{x}} = -2cos(\sqrt{x}) + c$

(l) $\int xe^{(-x^2)}dx = \frac{-1}{2}e^{(-x^2)} + c$

(m) $\int \sqrt{\frac{1+\sqrt{x}}{x}}dx = \frac{4}{3}(1+\sqrt{x})^{3/2} + c$

(n) $\int \frac{[1+ln(x^2)]^2}{x}dx = \frac{(1+ln(x^2))^3}{6} + c$

(o) $\int \frac{e^{\frac{1}{x}}}{x^2}dx = -e^{\frac{1}{x}} + c$

(p) $\int \frac{dx}{(4x+5)^5} = \frac{-1}{16(4x+5)^4} + c$

(q) $\int \frac{dx}{\sqrt{7x+9}} = \frac{2}{7}\sqrt{7x+9} + c$

(r) $\int \frac{cos\sqrt[3]{x}}{\sqrt[3]{x^2}}dx = 3sen(\sqrt[3]{x}) + c$