Departamento de Matemáticas
Facultad de Ciencias Naturales y Exactas
111051M - Cálculo II Gr. 05
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Taller 11. Fracciones parciales

1. Determine las siguientes integrales impropias

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

(b) $\int \frac{1}{x^2-3x}\,dx$

(c) $\int \frac{1}{x^2+x-6}\,dx$

(d) $\int \frac{1}{x^3+4x}\,dx$

(e) $\int \frac{x^4}{x^2+4}\,dx$

(f) $\int \frac{x^2+2x}{(x+1)^2}\,dx$

(g) $\int \frac{1}{x^2-4}\,dx$

(h) $\int \frac{x+10}{2x^2+5x-3}\,dx$

(i) $\int \frac{x^2+1}{x^3+2x^2+x}\,dx$

(j) $\int \frac{4x^3-7x}{x^4-5x^2+4}\,dx$

(k) $\int \frac{x^2}{(x+2)^3}\,dx$

(l) $\int \frac{x+4}{x^3+4x}\,dx$

(m) $\int \frac{x^2+4}{(x^2+1)^2(x^2+2)}\,dx$

(n) $\int \frac{x^3}{x^2+x-6}\,dx$

(o) $\int \frac{2x^3-1}{x^2+1}\,dx$

(p) $\int \frac{x^4}{x^2+4x+4}\,dx$

(q) $\int \frac{x+1}{x^3-x^2}\,dx$

(r) $\int \frac{2x^2+3}{x^4-2x^2+1}\,dx$

(s) $\int \frac{x^2+x}{(x^2-4)(x+4)}\,dx$

(t) $\int \frac{x^2+2}{(x+1)^2}\,dx$

(u) $\int \frac{x^2}{x^4-1}\,dx$

(v) $\int \frac{4x^4+x+1}{x^5+x^4}\,dx$

(w) $\int \frac{x^3}{2x-1}\,dx$

(x) $\int \frac{x}{x^2+4x}\,dx$

2. Utilice una sustitución preliminar antes de usar el método de fracciones parciales.

(a) $\int \frac{e^{4t}}{(e^{2t}-1)^3}\,dt$

(b) $\int \frac{\sec^2 t}{\tan^3+\tan^2 t}\,dt$

(c) $\int \frac{1+\ln t}{t(3+2\ln t)^2}\,dx$