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Materia: Matemática aplicada

Grado: 6to semestre

Grupo: Bachillerato-Enfermería

Osvaldo

① $\int \frac{1}{(x^2+4x-5)}dx$

$v = x+2$

$a = 3$

$(x+2)^2 - 3$

$x^2+4+8+8-5$

$\frac{1}{6}\ln\left(\frac{x-1}{x+5}\right)+C$

② $\int \frac{x}{(x^2-10x+30)}dx$

$v = x+5$

$a = -10$

$(x+10)^2 - 10$

$x^2-10+20+20+30$

$= \frac{1}{2}\ln(x^2-10x+30) + \sqrt{5}\arctan\left(\frac{x-5}{\sqrt{5}}\right)+C$

③ $\int \frac{1}{(x^2+6x+10)}dx$

$v = x^2+3$

$a = 3$

$(x-2)^2 - 8$

$= \arctan(x+3)+C$

$x^2+6+12+12+10$

④ $\int (x^2+8x+21)\,dx$

$v = x^2+4$

$a = 3$

$(x^2+3)-5$

$x^2+8+16+16+21$

$\frac{x^3}{3} + 4x^2 + 21x + C$

⑤ $\int \frac{1}{(x^2+2x-8)}\,dx$

$v = x^2+2$

$a = 4$

$(x^2+2)-4$

$x^2+2+4+4-8$

$\frac{x^2}{2} + 4x^2 - 8 + C$

⑥ $\int \frac{1}{(x^2-8x+20)}\,dx$

$v = x^2-4$

$a = 4$

$(x^2-4)-4$

$x^2-8+16+16+20$

$\frac{x^2}{4} = \text{arc sen}\left(\frac{x-4}{2}\right) + C$

⑦ $\int \frac{1}{(x^2+12x+27)}\,dx$

$a = x^2+12$

$v = 3$

$x^2+12+24+24+27$

$(x^2+12)+3$

$3\,\frac{x^2}{12}\,\ln\left(\frac{x+3}{x+12}\right)+C$

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⑧ $\int \frac{1}{(x^2-10x+16)}\,dx$

$a = x^2-10$

$v = 4$

$x^2-10+20+20+16$

$(x^2-2)+4$

$\frac{x^2}{10} = \ln 10\left(\frac{x^2-5}{x-2}\right)+C$