

Examen de Matemáticas 2º Bachillerato (CN)
Marzo 2006

Problema 1 Calcular las siguientes integrales:

1. $\int \frac{x^4 - x + 1}{x + 3} dx = \frac{x^4}{4} - x^3 + 9\frac{x^2}{2} - 28x + 85 \ln |x + 3| + C$
2. $\int \frac{\sqrt[3]{x} - x}{\sqrt{x}} dx = \frac{2\sqrt[6]{x^5}(9 - 5\sqrt[3]{x^2})}{15} + C$
3. $\int 5x \cos(x^2 + 1) dx = \frac{5}{2} \sin(x^2 + 1) + C$
4. $\int 5xe^{x^2+1} dx = \frac{5}{2} e^{x^2+1} + C$
5. $\int \frac{-4x}{\sqrt{1 - (x^2 + 1)^2}} dx = 2 \arccos(x^2 + 1) + C$
6. $\int \frac{7x^2}{1 + (x^3 - 1)^2} dx = \frac{7}{3} \arctan(x^3 - 1) + C$
7. $\int (x + 3)e^{x+1} dx = e^{x+1}(x + 2) + C$
8. $\int (2x + 1) \cos x dx = (2x + 1) \sin x + 2 \cos x + C$
9. $\int \frac{3x^2 - 1}{x^3 - x + 1} dx = \ln |x^3 - x + 1| + C$
10. $\int (x + 2) \ln x dx = \left(\frac{x^2}{2} + 2x\right) \ln x - \frac{x^2}{4} - 2x + C$