

Integration by parts

1. $\int \ln(2x + 3)dx$
2. $\int 5x \sec^2(9x)dx$
3. $\int_0^1 \frac{y}{e^{2y}}dx$
4. $\int_0^\pi e^{\cos x} \sin(2x)dx$
5. $\int \cos(\ln x)dx$

Trigonometric Integrals

6. $\int \sin^6 x \cos^3 x dx$
7. $\int_0^{\pi/4} \sin^4 x \cos^2 x dx$
8. $\int \cos^2 x \sin(2x)dx$
9. $\int \tan^3(2x) \sec^5(2x)dx$
10. $\int \tan^2 x \sec x dx$

Trigonometric Substitution

11. $\int \frac{dx}{x^2 \sqrt{25 - x^2}}$
12. $\int \frac{dt}{\sqrt{t^2 - 6t + 13}}$
13. $\int \frac{dx}{x^2 \sqrt{16x^2 - 9}}$
14. $\int_{-\pi/4}^0 \frac{\cos x dx}{\sqrt{1 + \sin^2 x}}$
15. $\int \sqrt{5 + 4x - x^2} dx$

Integration of Rational Functions

16. $\int_0^1 \frac{x^3 - 4x - 10}{x^2 - x - 6} dx$
17. $\int \frac{ds}{s^2(s - 1)^2}$
18. $\int \frac{x^2 - 2x - 1}{(x - 1)^2(x^2 + 1)} dx$
19. $\int \frac{x^3 + x^2 + 2x + 1}{(x^2 + 1)(x^2 + 2)} dx$
20. $\int \frac{3x^3 + 18x^2 + 33x - 2}{(x^2 + 6x + 10)^2} dx$