Integration Basics Practice

Instructions

Evaluate or simplify each integral. Show key antiderivative steps. Use exact values; include +C for indefinite integrals.

Problems

1. $\displaystyle \int 5x^4 \, dx$

2. $\displaystyle \int (3x^2 - 7x + 4) \, dx$

3. $\displaystyle \int \left(6x^{\frac{1}{2}} - \frac{4}{x} \right) dx$

4. $\displaystyle \int (2e^x - 5) \, dx$

5. $\displaystyle \int \left(\frac{3}{\sqrt{x}} + 4x^3 \right) dx$

6. $\displaystyle \int \cos(2x) \, dx$

7. $\displaystyle \int \left(7e^{-3x} \right) dx$

8. $\displaystyle \int \left(4x^3 + \frac{2}{x^2} \right) dx$

9. $\displaystyle \int (5\sin x + 3\cos x) \, dx$

10. $\displaystyle \int_0^2 (3x^2 - 2x + 1) \, dx$

11. $\displaystyle \int_1^e \left(\frac{1}{x} + 2 \right) dx$

12. $\displaystyle\int_{-1}^{1} (x^3 - 4x)\, dx$