

Evaluate each of the following indefinite integrals:

1. $\int (5t^8 - 4t^5 + 3t + 2) dt$

2. $\int \left(\frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3} \right) dx$

3. $\int (\sqrt{x} + x\sqrt{x}) dx$

4. $\int \left(\frac{1}{\sqrt{u}} + \frac{1}{u^2\sqrt{u}} \right) du$

5. $\int \frac{4}{\sqrt{9-x^2}} dx$

6. $\int \frac{t^2 + 3t + 6}{t} dt$

7. $\int (3e^x + 1) dx$

8. $\int (5 \cos x - 6 \sin x) dx$

9. $\int \frac{7}{x^2 + 9} dx$

Using appropriate substitutions, evaluate the indefinite integrals:

10. $\int (4e^{2t} + 5e^{-3t}) dt$

11. $\int [\cos(2x) + \sin(2x)] dx$

12. $\int [3 \sin(3t) + \cos(t/4)] dt$

13. $\int [5 \sin(\omega t) + \cos(3\omega t)] dt$

14. $\int (s - 4)^5 ds$

15. $\int \frac{3}{(x+1)^4} dx$

16. $\int (2y + 3)(y^2 + 3y + 2)^2 dy$