

Basic Integrals

Directions: Find the integrals and evaluate (on the definite integrals).

1. $\int 3 \, dx$

2. $\int 7x^2 - 5x + 1 \, dx$

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

4. $\int (3x^{-2} - 5 \sec^2 x - 1) \, dx$

5. $\int (x + 2)(x - 3) \, dx$

6. $\int \frac{dx}{x^4}$

7. $\int \frac{3}{\sqrt{x}} dx$

8. $\int x^{\frac{1}{3}}(x + 5) \, dx$

9. $\int (x^2 - 2x)^3 \, dx$

10. $\int \frac{x^4 - 3x^3 + x - 1}{x^2} dx$

11. $\int \frac{x^3 - 5x + 1}{x^4} dx$

12. $\int (\sec^2(x) - x - 1) \, dx$

13. $\int \frac{\cos^3(x) + 4}{\cos^2(x)} dx$

14. $\int \sec x \left(\frac{1 + \sin x}{\cos x} \right) dx$

15. $\int \frac{2 \sin 2x}{\cos x} dx$

16. $\int_0^3 (x^2 - 3) \, dx$

17. $\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} (\sin x + \cos x) \, dx$

18. $\int_1^5 (\sin^2 x + \cos^2 x) \, dx$

19. $\int_0^{\frac{\pi}{4}} (5 + 5 \tan^2 x) \, dx$

20. $\int_0^{\ln 2} (e^x + 1) \, dx$