

Exponential and Log Integrals

Evaluate the given integral.

1. $\int \frac{1}{e^x} dx$

2. $\int e^{-5x} dx$

3. $\int e^{\sin x} \cos x dx$

4. $\int x^3 e^{x^4} dx$

5. $\int x^2 e^{-2x^3} dx$

6. $\int \frac{e^x}{1+e^x} dx$

7. $\int \sqrt{e^x} dx$

8. $\int e^{2t} \sqrt{1+e^{2t}} dt$

9. $\int 2^{5x} dx$

10. $\int \pi^{\sin x} \cos x dx$

11. $\int_0^{\ln 2} e^{-3x} dx$

12. $\int_0^{\ln 5} e^x (3-4e^x) dx$

13. $\int_1^{\sqrt{2}} x 4^{-x^2} dx$

14. $\int_1^2 (3-e^x) dx$

15. $\int \frac{1}{2x} dx$

16. $\int_0^1 \frac{5x^4}{x^5+1} dx$

17. $\int \frac{x^2}{x^3-4} dx$

18. $\int \frac{t+1}{t} dt$

19. $\int \frac{1}{x \ln x} dx$

20. $\int \frac{1}{x} \cos(\ln x) dx$

21. $\int \frac{1}{x} (\ln x)^3 dx$

22. $\int \frac{1}{\sqrt{x}(1-2\sqrt{x})} dx$

23. $\int_0^1 \frac{1}{3x+2} dx$

24. $\int_1^4 \frac{3}{1-2x} dx$

25. $\int_{-1}^0 \frac{x}{x^2+5} dx$

26. $\int_1^4 \frac{1}{\sqrt{x}(1+\sqrt{x})} dx$

27. $\int_e^{e^2} \frac{1}{x \ln x} dx$

28. $\int_2^{16} \frac{1}{2x\sqrt{\ln x}} dx$

Exponential and Log Integrals

Evaluate the given integral.

$$1. \int \frac{1}{e^x} dx = -\frac{1}{e^x} + C$$

$$2. \int e^{-5x} dx = -\frac{1}{5e^{5x}} + C$$

$$3. \int e^{\sin x} \cos x dx = e^{\sin x} + C$$

$$4. \int x^3 e^{x^4} dx = \frac{1}{4} e^{x^4} + C$$

$$5. \int x^2 e^{-2x^3} dx = -\frac{1}{6e^{2x^3}} + C$$

$$6. \int \frac{e^x}{1+e^x} dx = \ln(1+e^x) + C$$

$$7. \int \sqrt{e^x} dx = 2e^{\frac{x}{2}} + C$$

$$8. \int e^{2t} \sqrt{1+e^{2t}} dt = \frac{1}{3} (1+e^{2t})^{\frac{3}{2}} + C$$

$$9. \int 2^{5x} dx = \frac{2^{5x}}{5 \ln 2} + C$$

$$10. \int \pi^{\sin x} \cos x dx = \frac{\pi^{\sin x}}{\ln \pi} + C$$

$$11. \int_0^{\ln 2} e^{-3x} dx = \frac{7}{24}$$

$$12. \int_0^{\ln 5} e^x (3-4e^x) dx = -36$$

$$13. \int_1^{\sqrt{2}} x 4^{-x^2} dx = \frac{3}{32 \ln 4}$$

$$14. \int_1^2 (3-e^x) dx = 3+e-e^2$$

$$15. \int \frac{1}{2x} dx = \ln \sqrt{x} + C$$

$$16. \int_0^1 \frac{5x^4}{x^5+1} dx = \ln 2$$

$$17. \int \frac{x^2}{x^3-4} dx = \ln \left| \sqrt[3]{x^3-4} \right| + C$$

$$18. \int \frac{t+1}{t} dt = t + \ln |t| + C$$

$$19. \int \frac{1}{x \ln x} dx = \ln |\ln x| + C$$

$$20. \int \frac{1}{x} \cos(\ln x) dx = \sin(\ln x) + C$$

$$21. \int \frac{1}{x} (\ln x)^3 dx = \frac{1}{4} (\ln x)^4 + C$$

$$22. \int \frac{1}{\sqrt{x}(1-2\sqrt{x})} dx = -\ln |1-2\sqrt{x}| + C$$

$$23. \int_0^1 \frac{1}{3x+2} dx = \ln \sqrt[3]{\frac{5}{2}}$$

$$24. \int_1^4 \frac{3}{1-2x} dx = -\ln \left(\frac{3}{7^2} \right)$$

$$25. \int_{-1}^0 \frac{x}{x^2+5} dx = \ln \sqrt{\frac{5}{6}}$$

$$26. \int_1^4 \frac{1}{\sqrt{x}(1+\sqrt{x})} dx = \ln \frac{9}{4}$$

$$27. \int_e^{e^2} \frac{1}{x \ln x} dx = \ln 2$$

$$28. \int_2^{16} \frac{1}{2x\sqrt{\ln x}} dx = \sqrt{\ln 2}$$