

Find the following integrals

1. $\int x e^x dx$

2. $\int \sqrt{x} \ln x dx$

3. $\int t \cdot 2^t dt$

4. $\int x \cos x dx$

5. $\int t^2 \cos(3t) dt$

6. $\int x e^{-x} dx$

7. $\int x^3 \ln x dx$

8. $\int x^2 e^{6x} dx$

9. $\int \frac{x^2}{e^{3x}} dx$

10. $\int_0^{\pi/4} \sin x \ln |\cos x| dx$

11. $\int x \ln x dx$

12. $\int x^3 \sqrt{4-x^2} dx$

13. $\int x \cos^2 x dx$

14. $\int e^x \sin x dx$

15. $\int 2x \tan^{-1} x dx$

16. $\int \ln x dx$

17. $\int (2x+1)e^x dx$

18. $\int x^2 \sqrt{x-1} dx$

19. $\int \sin^{-1} x dx$

20. $\int (\ln x)^2 dx$

21. $\int \tan^{-1} x dx$

22. $\int x^3 \sqrt{9-x^2} dx$

23. $\int e^{2x} \sin x dx$

24. $\int \cos^{-1} x dx$

25. $\int \frac{\ln x}{x^2} dx$

26. $\int \sin^3 x dx$

27. $\int x^2 \ln x dx$

28. $\int x \sin\left(\frac{1}{2}x\right) dx$