

Integrals using techniques up to Section 1.7

1. $\int \frac{\tan^{-1}(2t)}{1+4t^2} dt$

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

3. $\int e^{\tan x} \sec^2 x dx$

4. $\int_{\sqrt{3}}^1 \frac{dx}{1+x^2}$

5. $\int \cos^3 \theta \sin \theta d\theta$

6. $\int t \sin(t^2) \cos(t^2) dt$

7. $\int \frac{dx}{x(\ln x)^2}$

8. $\int_1^2 \frac{1+2x+x^2}{3x+3x^2+x^3} dx$

9. $\int \ln(\cos x) \tan x dx$

10. $\int_2^3 (t^2-9)(4-t^2) dt$

11. $\int_{\pi/4}^{\pi/2} \csc^2 \theta d\theta$

12. $\int_0^{\pi/4} \frac{\sin \theta}{\cos^4 \theta} d\theta$

13. $\int \frac{y^5}{(1-y^3)^{3/2}} dy$

14. $\int \frac{e^{\ln(1-t)}}{1-t} dt$

15. $\int \cos^2(\pi t) \sin(\pi t) dt$

16. $\int \frac{3x^2 + 2}{x^2} dx$

17. $\int_0^{1/2} \frac{\tan(\sin^{-1} t)}{\sqrt{1-t^2}} dt$

18. $\int_0^{\pi/4} \sec \theta \tan \theta d\theta$

19. $\int \frac{14x^3 + 2x + 1}{x^3} dx$

20. $\int \frac{\sin(3x) - \cos(3x)}{\sin(3x) + \cos(3x)} dx$

21. $\int x(1-x)^{99} dx$

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

$$23. \int_1^4 \frac{1}{2\sqrt{x}} dx$$

$$24. \int \frac{dx}{9+x^2}$$

$$25. \int (1 - \cos^3 \theta)^{10} \cos^2 \theta \sin \theta d\theta$$

$$26. \int_{\pi/4}^{\pi/3} \cot x dx$$

$$27. \int (11x - 7)^{-3} dx$$

$$28. \int \frac{e^t}{\sqrt{1 - e^{2t}}} dt$$

$$29. \int \frac{dx}{\sqrt{9 - x^2}}$$

$$30. \int_{-2}^3 (3 - |x|) dx$$

$$31. \int (4\sqrt{x} + \sqrt[3]{x}) dx$$

$$32. \int 3^{-x} dx$$

$$33. \int_0^{\sqrt{3}/2} \frac{dx}{\sqrt{1 - x^2}}$$

$$34. \int_0^{\pi/3} \frac{\sin x - \cos x}{\sin x + \cos x} dx$$

35. $\int \frac{\sin^{-1}t dt}{\sqrt{1-t^2}}$

36. $\int \frac{\cos x - x \sin x}{x \cos x} dx$

37. $\int \frac{dx}{x \ln x \ln(\ln x)}$

38. $\int_0^{1/2} \frac{\sin(\tan^{-1}t)}{1+t^2} dt$