

Integrals using techniques up to Section 3.4

1.  $\int_0^1 xe^{-2x} dx$

2.  $\int x \sin(2x) dx$

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

4.  $\int \ln x dx$

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

6.  $\int e^\theta \cos \theta d\theta$

7.  $\int_0^{\pi/2} x^2 \sin x dx$

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

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

10.  $\int xe^{-x} dx$

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

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

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

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

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

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

17.  $\int t^7 \sin(2t^4) dt$

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

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

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

21.  $\int x^2 \sin x dx$

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

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

$$24. \int \frac{\sin^{-1}t dt}{\sqrt{1-t^2}}$$

$$25. \int \frac{\cos x - x \sin x}{x \cos x} dx$$

$$26. \int x^2 \cos x dx$$

$$27. \int_{-\pi}^{\pi} x \sin x dx$$

$$28. \int e^x \sin x dx$$

$$29. \int \frac{dx}{x \ln x \ln(\ln x)}$$

$$30. \int x^3 \sin x dx$$

$$31. \int_0^{1/2} \frac{\sin(\tan^{-1}t)}{1+t^2} dt$$

$$32. \int \frac{\tan^{-1}(2t)}{1+4t^2} dt$$

$$33. \int \frac{3x^2+2}{x^2} dx$$

$$34. \int_0^{1/2} \frac{\tan(\sin^{-1}t)}{\sqrt{1-t^2}} dt$$

$$35. \int_0^{\pi/4} \sec \theta \tan \theta d\theta$$

$$36. \int \frac{14x^3+2x+1}{x^3} dx$$

$$37. \int \frac{\sin(3x) - \cos(3x)}{\sin(3x) + \cos(3x)} dx$$

$$38. \int x(1-x)^{99} dx$$

$$39. \int e^{-3x} dx$$

$$40. \int_0^1 \frac{x}{\sqrt{1+x^2}} dx$$

$$41. \int xe^{-x^2} dx$$

$$42. \int e^{\tan x} \sec^2 x dx$$

$$43. \int_{\sqrt{3}}^1 \frac{dx}{1+x^2}$$

$$44. \int \cos^3 \theta \sin \theta d\theta$$

$$45. \int t \sin(t^2) \cos(t^2) dt$$

$$46. \int \frac{dx}{x(\ln x)^2}$$

$$47. \int_1^2 \frac{1+2x+x^2}{3x+3x^2+x^3} dx$$

$$48. \int \ln(\cos x) \tan x dx$$

49.  $\int \sin(\ln(2x)) dx$

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

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

52.  $\int \ln(2x + 1) dx$

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

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

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

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