

20.  $-2\sqrt{1-x} + \cos^{-1}\sqrt{x} + \sqrt{x-x^2} + C$
21.  $e^x \tan x + C$
22.  $-2\log|x+1| - \frac{1}{x+1} + 3\log|x+2| + C$
23.  $\frac{1}{2}\left[x\cos^{-1}x - \sqrt{1-x^2}\right] + C$
24.  $-\frac{1}{3}\left(1 + \frac{1}{x^2}\right)^{\frac{3}{2}}\left[\log\left(1 + \frac{1}{x^2}\right) - \frac{2}{3}\right] + C$
25.  $\frac{\pi}{e^2}$
26.  $\frac{\pi}{8}$
27.  $\frac{\pi}{6}$
28.  $2\sin^{-1}\frac{(\sqrt{3}-1)}{2}$
29.  $\frac{4\sqrt{2}}{3}$
30.  $\frac{1}{40}\log 9$
31.  $\frac{\pi}{2} - 1$
32.  $\frac{\pi}{2}(\pi - 2)$
33.  $\frac{19}{2}$
34.  $\frac{1}{3}\left(e^2 - \frac{1}{e}\right)$
41. A
42. B
43. D
44. B

### EXERCISE 8.1

1.  $\frac{14}{3}$
2.  $16 - 4\sqrt{2}$
3.  $\frac{32 - 8\sqrt{2}}{3}$
4.  $12\pi$
5.  $6\pi$
6.  $\frac{\pi}{3}$
7.  $\frac{a^2}{2}\left(\frac{\pi}{2} - 1\right)$
8.  $(4)^{\frac{2}{3}}$
9.  $\frac{1}{3}$
10.  $\frac{9}{8}$
11.  $8\sqrt{3}$
12. A
13. B

**EXERCISE 8.2**

1.  $\frac{\sqrt{2}}{6} + \frac{9}{4} \sin^{-1} \frac{2\sqrt{2}}{3}$                       2.  $\left( \frac{2\pi}{3} - \frac{\sqrt{3}}{2} \right)$
3.  $\frac{21}{2}$                                       4. 4                                      5. 8
6. B                                      7. B

*Miscellaneous Exercise on Chapter 8*

1. (i)  $\frac{7}{3}$                                       (ii) 624.8
2.  $\frac{1}{6}$                                       3.  $\frac{7}{3}$                                       4. 9                                      5. 4
6.  $\frac{8a^2}{3m^3}$                                       7. 27                                      8.  $\frac{3}{2}(\pi-2)$
9.  $\frac{ab}{4}(\pi-2)$                               10.  $\frac{5}{6}$                                       11. 2                                      12.  $\frac{1}{3}$
13. 7                                      14.  $\frac{7}{2}$                                       15.  $\frac{9\pi}{8} - \frac{9}{4} \sin^{-1} \left( \frac{1}{3} \right) + \frac{1}{3\sqrt{2}}$
16. D                                      17. C                                      18. C                                      19. B

**EXERCISE 9.1**

1. Order 4; Degree not defined                      2. Order 1; Degree 1
3. Order 2; Degree 1                                      4. Order 2; Degree not defined
5. Order 2; Degree 1                                      6. Order 3; Degree 2
7. Order 3; Degree 1                                      8. Order 1; Degree 1
9. Order 2; Degree 1                                      10. Order 2; Degree 1
11. D                                      12. A

**EXERCISE 9.2**

11. D                                      12. D