

Review exercises answers.

1. $\frac{1}{3}(x^2-36)^{3/2} + C$; 3. $\frac{1}{2} \ln|x^2-49| + C$;

5. $\frac{1}{2} + \ln 2$; 7. $100 \arcsin\left(\frac{x}{10}\right) + C$;

11. $\frac{e^{2x}}{13} (2 \sin 3x - 3 \cos 3x) + C$;

13. $-\frac{1}{2} x^2 \cos 2x + \frac{x}{2} \sin 2x + \frac{1}{4} \cos 2x + C$;

16. $x \arctan 2x - \frac{1}{4} \ln(1+4x^2) + C$;

17. $\frac{1}{3\pi} \sin(\pi x - 1) [2 + \cos^2(\pi x - 1)] + C$;

18. $\frac{1}{2\pi} (\pi x - \sin(\pi x)) + C$;

19. $\frac{2}{3} [\tan^3(x/2) + 3 \tan(x/2)] + C$;

23. $\frac{3\pi}{16} + \frac{1}{2}$; 24. $\frac{3}{5} - \frac{\sqrt{2}}{5}$;

25. $\frac{3\sqrt{4-x^2}}{x} + C$; 26. $\sqrt{x^2-9} - 3 \arccos\left(\frac{3}{x}\right) + C$;

28. $\frac{25}{6} \arcsin\left(\frac{3x}{5}\right) + \frac{x}{2} \sqrt{25-9x^2} + C$;

33. $-5 \ln|x-4| + 6 \ln|x+3| + C$;

$$35. \frac{1}{4} [6 \ln|x-1| - \ln(x^2+1) + 6 \arctan x] + C$$

$$36. \frac{2}{3} \left(2 \ln|x-1| - \frac{1}{x-1} \right) + C;$$

$$38. \ln|\tan \theta - 1| - \ln|\tan \theta| + C;$$

$$62. 2 \ln 3 - 2 \ln 4 + \ln 2;$$

$$63. \frac{1}{2} (\ln 4)^2;$$

$$73. 0; \quad 75. \infty; \quad 77. 1; \quad 79. 1000e^{0.09}$$

$$81. \frac{32}{3}; \quad 83. \infty \text{ (diverges)};$$

$$85. 1; \quad 87. \pi/4; \quad 88. \pi$$