

Answer Key

1. $\frac{(1+5s)^6}{30} + C$
2. $\frac{(5+z^5)^7}{35} + C$
3. $\frac{2(3+t^7)^{\frac{3}{2}}}{21} + C$
4. $\frac{-1}{5(x^2+5)^5} + C$
5. $2\sqrt{z^4+3} + C$
6. $\frac{16}{3}x^{\frac{3}{2}} - \frac{2}{5}x^{\frac{5}{2}} + C$
7. $f(t) = 2t^2 - 3\sqrt{1-t^2} + C$
8. $f(s) = \frac{-1}{(2s^2+4s+3)} + C$
9. $\frac{\sin 2\pi u}{2} + C$
10. $\sin t^4 + C$
11. $\frac{\sin 6x}{6} + C$
12. $-\frac{(\sin u)^4}{4} + C$
13. 0.7747
14. 0.00000110
15. $\sqrt{1-4x^6}$
16. $\sqrt{1-64x^2}$
17. $\frac{\sqrt{x^2-49}}{7}$
18. $x = \frac{\pi + \sin\left(\frac{1}{2}\right)}{3}$
19. $x = \frac{\pi + \cos\left(\frac{1}{2}\right)}{5}$

$$20. f'(x) = \frac{6(16x+2)}{\sqrt{1-(8x^2+2x-4)^2}}$$

21. Both A and B

$$22. \frac{dy}{dx} = \frac{1}{3} \cdot \left(\frac{1}{1+(x/3)^2} + \frac{80+12x-10x^2}{(x^2+8)^2} \right)$$

$$23. y = 4\sqrt{2}x + \frac{\pi}{4} - 1$$

$$24. \frac{1}{9} \arcsin\left(\frac{9x}{7}\right) + C$$

$$25. \frac{1}{10} \operatorname{artanh}\left(\frac{x-4}{10}\right) + C$$

26. None of the above

$$27. \ln|x^2+8x+41| - \frac{11}{5} \arctan\left(\frac{x+4}{5}\right) + C$$

$$28. \arcsin\left(\frac{x+4}{4}\right) + C$$

$$29. \frac{35}{12}, \frac{5}{4}$$

$$30. -\frac{99}{20}, \frac{101}{20}$$

$$31. \frac{17}{8}, \frac{15}{17}$$

$$32. \frac{37}{12}, \frac{35}{37}$$

$$33. \frac{dy}{dx} = -3 \operatorname{sech}(3x+5) \tanh(3x+5)$$

$$34. \frac{dy}{dx} = -10 \operatorname{csch}^2(10x)$$

$$35. \frac{dy}{dx} = 60 \tanh(6x)$$

$$36. \frac{dy}{dx} = \frac{1}{2} \cosh(8x) + 2 \operatorname{csch}^2\left(\frac{x}{7}\right) + \frac{1}{16}$$

$$37. \frac{-1}{6} \cosh(5-6x) + C$$

$$38. -\operatorname{coth}\left(\frac{x^3}{3}\right) + C$$