Review of Integrals from AB.

5.8 REVIEW EXERCISES

r. 1–42: Evaluate.

1 $\int \frac{8x^2 - 4x + 5}{x^4}\,dx$

2 $\int (3x^5 + 2x^3 - x)\,dx$

3 $\int 100\,dx$

4 $\int x^{3/5}(2x - \sqrt{x})\,dx$

5 $\int (2x+1)^7\,dx$

6 $\int \sqrt[3]{5x+1}\,dx$

$\int (1 - 2x^2)^3\,x\,dx$

8 $\int \frac{(1+\sqrt{x})^2}{\sqrt[3]{x}}\,dx$

9 $\int \frac{1}{\sqrt{x}(1+\sqrt{x})^2}\,dx$

10 $\int (x^2+4)^2\,dx$

11 $\int (3 - 2x - 5x^3)\,dx$

12 $\int (x + x^{-1})^2\,dx$

13 $\int (4x+1)(4x^2+2x-7)^2\,dx$

14 $\int \frac{\sqrt[4]{1-(1/x)}}{x^2}\,dx$

15 $\int (2x^{-3} - 3x^2)\,dx$

16 $\int (x^{3/2} + x^{-3/2})\,dx$

17 $\int \sqrt[3]{8x^7}\,dx$

18 $\int \frac{x^2 - x - 6}{x+2}\,dx$

19 $\int \frac{x^2}{(1+x^3)^2}\,dx$

20 $\int \sqrt{2x+7}\,dx$

21 $\int \frac{x+1}{\sqrt{x^2+2x}}\,dx$

22 $\int \frac{x^2+2}{x^2}\,dx$

23 $\int x^2\sqrt{x^3+1}\,dx$

24 $\int_1^1 3x^2\sqrt{x^3+1}\,dx$

25 $\int (2x-3)(5x+1)\,dx$

26 $\int (x^2+1)^2\,dx$

27 $\int \sqrt{3x}(\sqrt{x}+\sqrt{3})\,dx$

28 $\int (x+1)(x+2)(x+3)\,dx$

29 $\int \sin(3-5x)\,dx$

30 $\int x^2\cos(2x^3)\,dx$

31 $\int \cos 3x \sin^4 3x\,dx$

32 $\int \frac{\sin(1/x)}{x^2}\,dx$

33 $\int \frac{\cos 3x}{\sin^3 3x}\,dx$

34. $\int_e^6 \frac{dx}{x\ln x}$

35. $\int_{-\pi/4}^{\pi/4} \tan^2 x \sec^2 x\,dx$

36. $\int \sqrt{\cot x}\csc^2 x\,dx$

37. $\int \frac{\ln^6 x}{x}\,dx$

38. $\int x^{\frac{1}{3}}\cos(x^{\frac{4}{3}} - 8)\,dx$

39. $\int \frac{dx}{\sin^2 3x}$

40. $\int \frac{\sin(2t+1)}{\cos^2(2t+1)}\,dt$

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

42. $\int_{-1}^{3} \frac{x}{x^2+1}\,dx$

43. $\int \frac{dx}{\cot 3x}$

Swok 5.8 Review Key

1. $-\frac{8}{x}+\frac{2}{x^2}-\frac{5}{3x^3}+c$ 2. $\frac{1}{2}(x^6+x^4-x^2)+c$ 3. $100x+c$

4. $\frac{10}{13}x^{13/5}-\frac{10}{21}x^{21/10}+c$ 5. $\frac{1}{16}(2x+1)^8+c$ 6. $\frac{3}{20}(5x+1)^{4/3}+c$

7. $-\frac{1}{16}(1-2x^2)^4+c$ 8. $\frac{3}{2}x^{2/3}+\frac{12}{7}x^{7/6}+\frac{3}{5}x^{5/3}+c$ 9. $-\frac{2}{1+\sqrt{x}}+c$

10. $\frac{1}{5}x^5+\frac{8}{3}x^3+16x+c$ 11. $3x-x^2-\frac{5}{4}x^4+c$ 12. $\frac{1}{3}x^3+2x-\frac{1}{x}+c$

13. $\frac{1}{6}(4x^2+2x-7)^3+c$ 14. $\frac{4}{5}(1-x^{-1})^{5/4}+c$ 15. $-\frac{1}{x^2}-x^3+c$

16. $\frac{2}{5}x^{5/2}-2x^{-1/2}+c$ 17. $\frac{3}{5}x^{10/3}+c$ 18. $\frac{1}{2}x^2-3x+c$

19. $-\frac{1}{3(1+x^3)}+c$ 20. $\frac{1}{3}(2x+7)^{3/2}+c$ 21. $\sqrt{x^2+2x}+c$

22. $x-\frac{2}{x}+c$ 23. $\frac{2}{9}(x^3+1)^{3/2}+c$ 24. [redacted] (0)

25. $\frac{10}{3}x^3-\frac{13}{2}x^2-3x+c$ 26. $\frac{1}{5}x^5+\frac{2}{3}x^3+x+c$

27. $\frac{\sqrt{3}}{2}x^2+2x^{3/2}+c$ 28. $\frac{1}{4}x^4+2x^3+\frac{11}{2}x^2+6x+c$

29. $\frac{1}{5}\cos(3-5x)+c$ 30. $\frac{1}{6}\sin(2x^3)+c$ 31. $\frac{1}{15}(\sin 3x)^5+c$

32. $\cos\left(\frac{1}{x}\right)+c$ 33. $-\frac{1}{6}(\sin 3x)^{-2}+c$ 34. $\ln(\ln 6)$ 35. $\frac{2}{3}$

36. $-\frac{2}{3}(\cot x)^{3/2}+c$ 37. $\frac{1}{7}(\ln^7 x)+c$ 38. $\frac{3}{4}\sin(x^{4/3}-8)+c$

39. $-\frac{1}{3}\cot(3x)+c$ 40. $\frac{1}{2}\sec(2t+1)+c$ 41. $\ln|\sin x|\Big]_{\pi/4}^{3\pi/4}=$

42. $\frac{1}{2}\ln 5$ 43. $-\frac{1}{3}\ln|\cos 3x|+c=\frac{1}{3}\ln|\sec 3x|+c$