

Integration Problems 2

Answers to Odd-Numbered Exercises

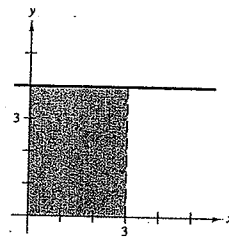
Section 5.1

Given	Rewrite	Integrate	Simplify
1. $\int \sqrt[3]{x} dx$	$\int x^{1/3} dx$	$\frac{x^{4/3}}{4/3} + C$	$\frac{3}{4}x^{4/3} + C$
3. $\int \frac{1}{x\sqrt{x}} dx$	$\int x^{-3/2} dx$	$\frac{x^{-1/2}}{-1/2} + C$	$-\frac{2}{\sqrt{x}} + C$
5. $\int \frac{1}{2x^3} dx$	$\frac{1}{2} \int x^{-3} dx$	$\frac{1}{2} \left(\frac{x^{-2}}{-2} \right) + C$	$-\frac{1}{4x^2} + C$
7. $\frac{1}{4}x^4 + 2x + C$	9. $\frac{2}{3}x^{5/2} + x^2 + x + C$		
11. $\frac{3}{5}x^{5/3} + C$	13. $-\frac{1}{2x^2} + C$	15. $-\frac{1}{4x} + C$	
17. $\frac{2}{15}x^{1/2}(3x^2 + 5x + 15) + C$			
19. $x^3 + \frac{1}{2}x^2 - 2x + C$	21. $t - \frac{2}{t} + C$		
23. $\frac{2}{7}y^{7/2} + C$	25. $x + C$		
27. $-2 \cos x + 3 \sin x + C$	29. $t + \csc t + C$		
31. $\tan \theta + \cos \theta + C$	33. $\tan y + C$		

Section 5.3

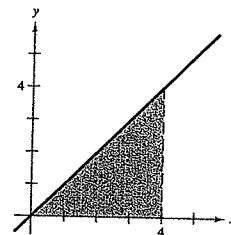
1. $\int_0^5 3 dx$ 3. $\int_{-4}^4 (4 - |x|) dx$
 5. $\int_{-2}^2 (4 - x^2) dx$ 7. $\int_0^2 y^3 dy$ 9. $\int_0^\pi \sin x dx$

11. $A = 12$



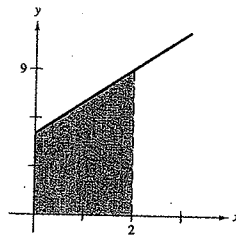
Rectangle

13. $A = 8$



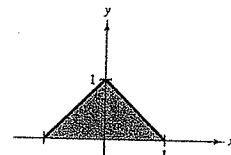
Triangle

15. $A = 14$



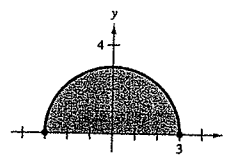
Trapezoid

17. $A = 1$



Triangle

19. $A = \frac{9\pi}{2}$



Semicircle