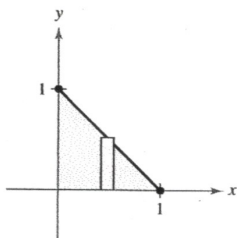


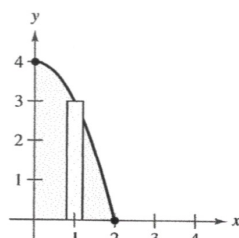
EXERCISES FOR SECTION 6.2

In Exercises 1–6, set up and evaluate the integral that gives the volume of the solid formed by revolving the region about the x -axis.

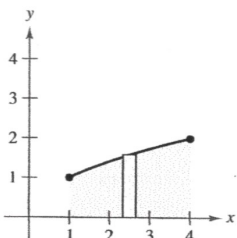
1. $y = -x + 1$



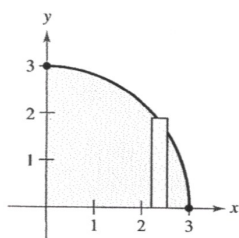
2. $y = 4 - x^2$



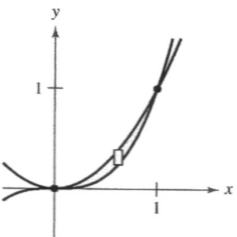
3. $y = \sqrt{x}$



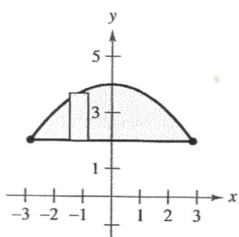
4. $y = \sqrt{9 - x^2}$



5. $y = x^2, y = x^3$

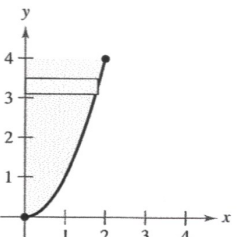


6. $y = 2, y = 4 - \frac{x^2}{4}$

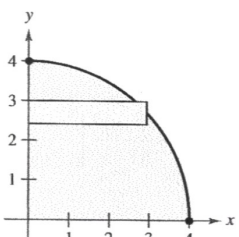


In Exercises 7–10, set up and evaluate the integral that gives the volume of the solid formed by revolving the region about the y -axis.

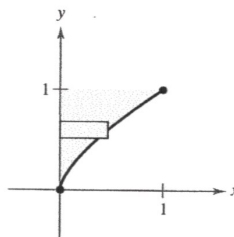
7. $y = x^2$



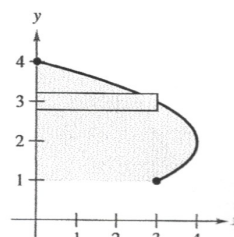
8. $y = \sqrt{16 - x^2}$



9. $y = x^{2/3}$



10. $x = -y^2 + 4y$



In Exercises 11–14, find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the indicated lines.

11. $y = \sqrt{x}, y = 0, x = 4$

- (a) the x -axis (b) the y -axis
- (c) the line $x = 4$ (d) the line $x = 6$

12. $y = 2x^2, y = 0, x = 2$

- (a) the y -axis (b) the x -axis
- (c) the line $y = 8$ (d) the line $x = 2$

13. $y = x^2, y = 4x - x^2$

- (a) the x -axis (b) the line $y = 6$

14. $y = 6 - 2x - x^2, y = x + 6$

- (a) the x -axis (b) the line $y = 3$

In Exercises 15–18, find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the line $y = 4$.

15. $y = x, y = 3, x = 0$

16. $y = \frac{1}{2}x^3, y = 4, x = 0$

17. $y = \frac{1}{1+x}, y = 0, x = 0, x = 3$

18. $y = \sec x, y = 0, 0 \leq x \leq \frac{\pi}{3}$

In Exercises 19–22, find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the line $x = 6$.

19. $y = x, y = 0, y = 4, x = 6$

20. $y = 6 - x, y = 0, y = 4, x = 0$

21. $x = y^2, x = 4$

22. $xy = 6, y = 2, y = 6, x = 6$