HW 7.2

Find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the line y=4.

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

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

Find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the line x=6.

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

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

Find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the x-axis.

23. $y=\frac{1}{\sqrt{x+1}},\quad y=0,\quad x=0,\quad x=3$

29. $y=x^2+1,\quad y=-x^2+2x+5,\quad x=0,\quad x=3$

26. $y=\frac{3}{x+1},\quad y=0,\quad x=0,\quad x=8$

30. $y=\sqrt{x},\quad y=-\frac{1}{2}x+4,\quad x=0,\quad x=8$

Find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the y-axis.

31. $y=3(2-x),\quad y=0,\quad x=0$

Find the volume of the solid generated by revolving the region bounded by the graphs of the equations about the x-axis.

33. $y=\sin x,\quad y=0,\quad x=\pi$

35. $y=e^{x-1},\quad y=0,\quad x=1,\quad x=2$

61. Find the volume of the solid whose base is bounded by the graphs $y=x+1$ and $y=x^2-1$, with the indicated cross sections taken perpendicular to the x-axis.

a) Squares b) Rectangles of height 1

62. Find the volume of the solid whose base is bounded by the circle $x^2+y^2=4$ with the indicated cross sections taken perpendicular to the x-axis.

a) Squares b) Equilateral triangles c) Semicircles d) Isosceles right triangles