1–2 Plot the point whose spherical coordinates are given. Then find the rectangular coordinates of the point.

2. (a) $(5, \pi, \pi/2)$ (b) $(4, 3\pi/4, \pi/3)$

3–4 Change from rectangular to spherical coordinates.

4. (a) $(0, \sqrt{3}, 1)$ (b) $(-1, 1, \sqrt{6})$

5–6 Describe in words the surface whose equation is given.

6. $\rho = 3$

7–8 Identify the surface whose equation is given.

8. $\rho^2(\sin^2\phi \sin^2\theta + \cos^2\phi) = 9$

11–14 Sketch the solid described by the given inequalities.

12. $2 \leq \rho \leq 3, \quad \pi/2 \leq \phi \leq \pi$

14. $\rho \leq 2, \quad \rho \leq \csc\phi$

15. A solid lies above the cone $z = \sqrt{x^2 + y^2}$ and below the sphere $x^2 + y^2 + z^2 = z$. Write a description of the solid in terms of inequalities involving spherical coordinates.

17–18 Sketch the solid whose volume is given by the integral and evaluate the integral.

18. $\int_0^{2\pi} \int_{\pi/2}^{\pi} \int_1^2 \rho^2 \sin\phi \, d\rho \, d\phi \, d\theta$

26. Evaluate $\iiint_E xyz \, dV$, where E lies between the spheres $\rho = 2$ and $\rho = 4$ and above the cone $\phi = \pi/3$.

35–38 Use cylindrical or spherical coordinates, whichever seems more appropriate.

36. Find the volume of the smaller wedge cut from a sphere of radius a by two planes that intersect along a diameter at an angle of $\pi/6$.