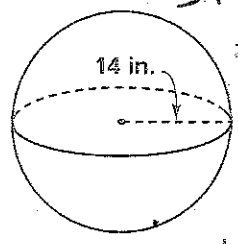


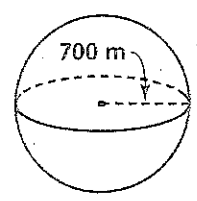
Practice 10-7 $SA = 4\pi r^2$ $V = \frac{4}{3}\pi r^3$ Surface Areas and Volumes of Spheres

Find the surface area of each sphere. Round your answers to the nearest tenth.

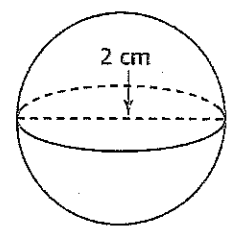
$D = 2$
 $r = 1$



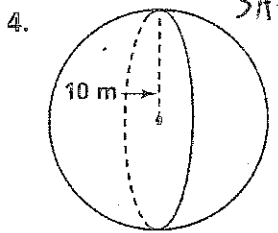
$SA = 4\pi(14)^2$
 $= 2461.8$



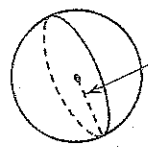
$4\pi(700)^2$
 $= 6154400$



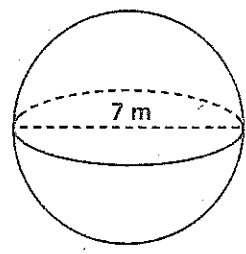
$SA = 4\pi$
 ≈ 12.56



$SA = 4\pi(10)^2$
 $= 400\pi$
 $= 1256$

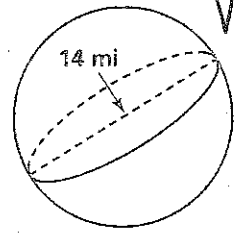


$SA = 4\pi(2)^2$
 $= 16\pi$
 $= 50.24$

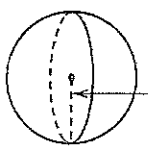


$D = 7$
 $r = 3.5$
 $SA = 4\pi(3.5)^2$
 $= 153.86$

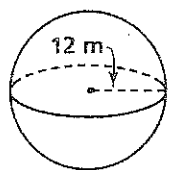
Find the volume of each sphere. Round your answers to the nearest tenth.



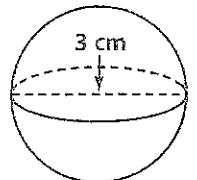
$V = \frac{4}{3}\pi(7)^3$
 $= 1436.0$



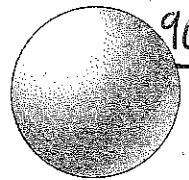
$V = \frac{4}{3}\pi(40)^3$
 ≈ 26796.7



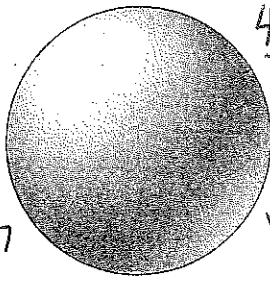
$V = \frac{4}{3}\pi(12)^3$
 $= 7234.6$



$V = \frac{4}{3}\pi(1.5)^3$
 $= 14.13$



$90,790 = \frac{4\pi r^2}{4}$
 $4\pi r^2 = 90,790$
 $r^2 = 722.85$
 $r = 85$
 $S.A. = 90,790 \text{ cm}^2$
 ~~$V = 2,571,137$~~



$\frac{4\pi r^2}{4} = 45240$
 $\frac{\pi r^2}{\pi} = 11310$
 $r^2 = 3601.9$
 $r \approx 60$
 $S.A. = 45,240 \text{ yd}^2$
 $V = \frac{4}{3}\pi(60)^3$
 $V = 904320$

The volume of each sphere is given. Find the surface area. Round your answers to the nearest whole number.

13. $V = 1200 \text{ ft}^3$
 $SA = 546$

14. $V = 750 \text{ m}^3$
 $SA = 399$

15. $V = 4500 \text{ cm}^3$
 $4500 = \frac{4}{3}\pi r^3 \rightarrow r = 10.2$
 $SA = 1318$

Use the given circumference to approximate the volume of each object. Round your answers to the nearest whole number.

- 16. a baseball with $C = 24 \text{ cm}$ 233.3
- 17. a basketball with $C = 75 \text{ cm}$ 7131.3
- 18. a volleyball with $C = 69 \text{ cm}$ 5553.1
- 19. a golf ball with $C = 13.5 \text{ cm}$ 41.6

Solutions on Back

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$$(13) V = 1200$$

$$1200 = \frac{4}{3} (\pi) r^3$$

$$900 = \pi r^3$$

$$287 = r^3$$

$$6.6 = r$$

$$SA = 4\pi (6.6)^2$$
$$= 546$$

(14)

$$V = 750$$

$$750 = \left(\frac{4}{3}\right) \pi r^3$$

$$750 \left(\frac{3}{4}\right) = \frac{562.5}{\pi} = \frac{\pi r^3}{\pi}$$

$$179.1 = r^3$$

$$5.64 = r$$

$$SA = 4\pi (5.64)^2$$

(16)

$$C = 24 \text{ cm}$$

$$C = 24 = \frac{2\pi r}{2\pi}$$

$$3.82 = r$$

$$V = \frac{4}{3} (\pi) (3.82)^3$$

$$= 233.3$$