

1CA

5. Convert 450 inches, to yards, feet & inches

$$\textcircled{1} 450 \text{ in} \times \frac{1 \text{ Ft}}{12 \text{ in}} \times \frac{1 \text{ yd}}{3 \text{ Ft}} = 12.5 \text{ yd.}$$

$$0.5 \text{ yd} \times \frac{3 \text{ Ft}}{1 \text{ yd}} = 1.5 \text{ Ft}$$

$$0.5 \text{ Ft} \times \frac{12 \text{ in}}{1 \text{ Ft}} = 6 \text{ in}$$

12 yd, 1 Ft, 6 in

$$6. \quad 66 \text{ in} \times \frac{1 \text{ ft}}{12 \text{ in}} = 5.5 \text{ ft}$$

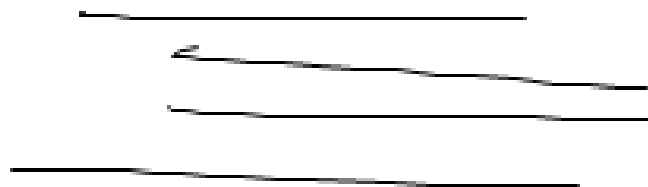
~~5' 5"~~

5' 6"

Jane is taller by 2 inches

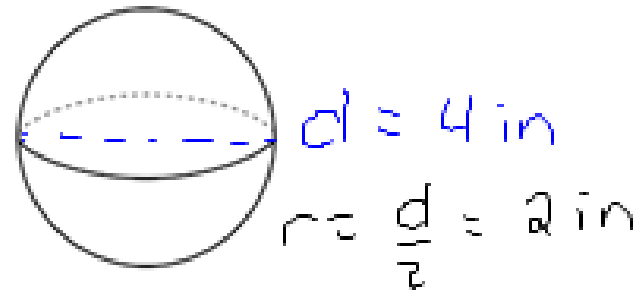
8 b) km \rightarrow yd

Round at the end!!!



1.6 Surface Area and Volume of a Sphere

1. The diameter of a softball is approximately 4 in. Determine the surface area of a softball to the nearest square inch.



$$SA = 4\pi r^2$$

$$SA = 4\pi(2)^2 = 16\pi = 50.26 \text{ in}^2$$

$$SA = 50 \text{ in}^2$$

2. The surface area of a soccer ball is approximately 250 square inches. What is the diameter of a soccer ball to the nearest tenth of an inch?

$$SA = 250 \text{ in}^2$$

$$SA = 4\pi r^2$$

$$\frac{250}{4\pi} = \frac{4\pi r^2}{4\pi}$$

$$\sqrt{19.89} = \sqrt{r^2}$$

$$4.45 \text{ in} = r$$

①

① solve for r

② $d = 2r$
solve for diameter.

$$\textcircled{2} \quad d = 2(4.45) = 8.\underline{9} \text{ in}$$

$$d = 2r$$

$$\frac{d}{2} = r$$

$$SA = 4\pi \left(\frac{d}{2}\right)^2$$

3. The moon approximates a sphere with diameter 2160 mi. What is the approximate volume of the moon?

$$d = 2160 \text{ mi}$$
$$r = \frac{d}{2} = 1080 \text{ mi}$$

$$V = \frac{4}{3} \pi r^3$$

$$V = \frac{4 \pi (1080)^3}{3} = \underline{5276669286} \text{ mi}^3$$
$$= 5.28 \times 10^9 \text{ mi}^3$$

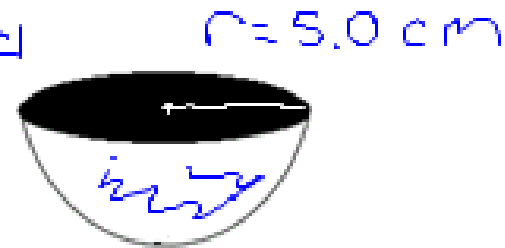
$$\begin{array}{c} \# \\ \rightarrow \\ 1-9 \end{array} \cdot \text{mi} \times 10^9$$

↳ half a sphere

4. A hemisphere has radius 5.0 cm.

a) What is the surface area of the hemisphere to the nearest tenth of a square centimetre?

b) What is the volume of the hemisphere to the nearest tenth of a cubic centimetre?



$$\div 2 = \times \frac{1}{2}$$

$$a) SA = \frac{4\pi r^2}{2} + \pi r^2$$

$$a) SA = 3\pi r^2 = 3\pi (5.0)^2 = 75\pi = 235.6 \text{ cm}^2$$

hemisphere ↗

$$b) V = \frac{4\pi r^3}{3} \cdot \frac{1}{2} = \frac{4\pi r^3}{6} = \frac{2\pi r^3}{3} = \frac{2\pi (5.0)^3}{3}$$

$$V = 261.8 \text{ cm}^3$$

$$SA = 4\pi r^2$$

$$250 = 4\pi r^2$$

$$\sqrt{\frac{250}{4\pi}} = \sqrt{r^2}$$

opposite of squaring
is square root



$$V = \frac{4\pi r^3}{3}$$

opposite of cubing
is cube root

