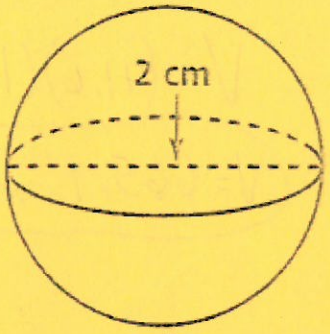
Name: AK Period: Date:

12.3 Spheres Practice and Review

Find the surface area. Give an answer in terms of pi and as a decimal

1.

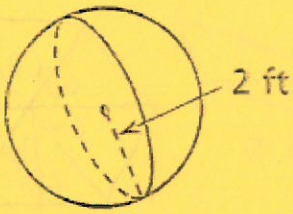


$4\pi(1)^2$

$4\pi\ cm^2$

$12.56\ cm^2$

2.



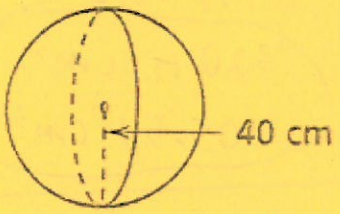
$4\pi(2)^2$

$16\pi\ ft^2$

$50.24\ ft^2$

Find the volume of the sphere. Give an answer in terms of pi and as a decimal.

3.

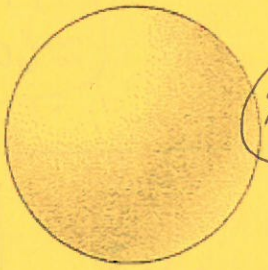


$V = \frac{4}{3}\pi(40)^3$

$\frac{256000}{3}\pi\ cm^3$

$268083\ cm^3$

4.



$\approx 2,574,310\ cm^3$

819429π

S.A. $= 90{,}790\ cm^2 = 4\pi r^2$

$\frac{}{4\pi} \qquad \frac{}{4\pi}$

$7228.5 = r^2$

$r = 85 \rightarrow V = \frac{4}{3}\pi(85)^3$

5. Given a sphere has a volume of 1200 ft^3, find the surface area of the sphere as decimal.

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

$\frac{}{\frac{4}{3}\pi} \qquad \frac{}{\frac{4}{3}\pi}$

$286.48 = r^3 \xrightarrow{\sqrt[3]{286.48}} r = 6.59$

$4\pi(6.59)^2$

$546.1\ Ft^2$

6. A baseball has a circumference of 24 cm^2. Find the volume of the baseball.

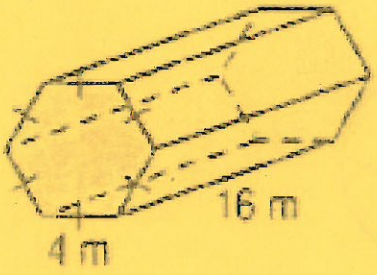
$C = 2\pi r = 24$

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

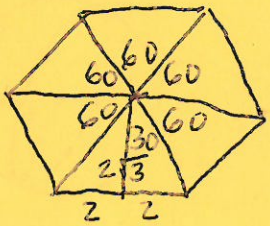
$233.5\ cm^3$

Find the volume and surface area of each object. Indicate the units. Assume each base is a regular polygon.

7.

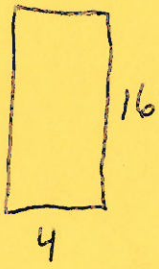


S A



$A_H = \frac{4(2\sqrt{3})}{2} \cdot 6$

$A_H = 41.6\ m^2$



$A_R = 64\ m^2$

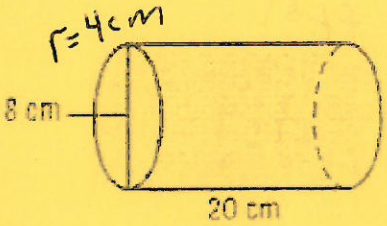
$SA = 2(41.6) + 6(64) = 31925.2\ m^2$

Volume

$V = (41.6)(16)$

$V = 665.1\ m^3$

8.



$SA = 2\pi 4^2 + 2\pi 4 \cdot 20$

$192\pi\ cm^2$

$\approx 602.88\ cm^2$

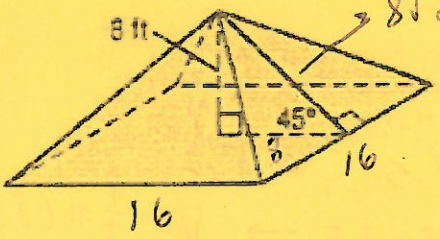
$V = \pi r^2 h$

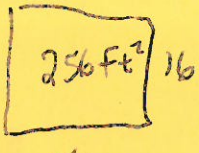
$\pi(4)^2 \cdot 20$

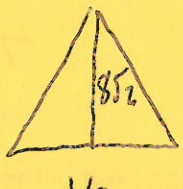
$320\pi\ cm^3$

$1005.31\ cm^3$

9.







$\frac{16 \cdot 8\sqrt{2}}{2} = 90.5$

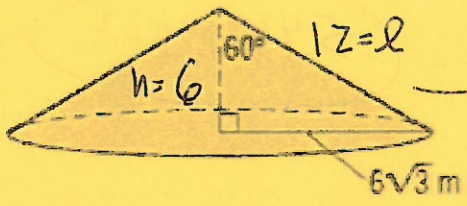
$SA = 256 + 4(90.5)$

$618\ Ft^2$

$V = \frac{256 \cdot 8}{3}$

$V = 682.7\ ft^3$

10.



$SA = \pi r^2 + \pi r \ell$

$\pi(6\sqrt{3})^2 + \pi(6\sqrt{3})12$

$731.1\ m^2$

$V = \frac{\pi(6\sqrt{3})^2 \cdot 6}{3}$

$V = 216\pi\ m^3$

$678.6\ m^3$