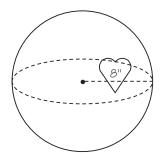
5.13.6 WS

Surface Area and Volume of Spheres

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

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

Find the surface area and volume of the spheres. Leave all answers in terms of $\boldsymbol{\pi}.$



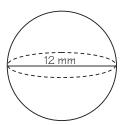
Surface Area: $S = 4 \cdot \pi \cdot 2^2$

$$= 4 \bullet$$
_____ $\pi =$ ____ in^2

Volume:
$$V = \frac{4}{3} \bullet \pi \bullet$$

$$= \frac{4}{3} \bullet \underline{\qquad} \pi = \underline{\qquad} \text{in}^3$$

2.



radius:
$$r = \frac{1}{2} = \frac{1}{2}$$
 mm

Surface Area:
$$S = 4 \cdot \pi \cdot \underline{}^2$$

Volume:
$$V = \frac{4}{3} \cdot \pi \cdot \underline{\qquad}^3$$

$$=\frac{4}{3} \bullet \underline{\qquad} \pi = \underline{\qquad} mm^3$$

 $= 4 \bullet \underline{\qquad} \pi = \underline{\qquad} mm^2$

3. A sphere with radius of 9 cm. Surface Area:

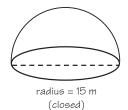
Volume:

4. What is the **volume** of a sphere whose **surface area** is $196\pi \text{ yd}^2$?

$$S=3\pi r^2 \, (closed) \; or \; S=2\pi r^2 \; (open)$$

$$V=\frac{2}{3}\pi r^3 \; \label{eq:V}$$

1.



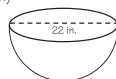
Surface Area: $S = 3 \cdot \pi \cdot _{2}$

$$= 3 \bullet \underline{\qquad} \pi = \underline{\qquad} m^2$$

Volume:
$$V = \frac{2}{3} \cdot \pi \cdot \underline{\hspace{1cm}}^3$$

$$=\frac{2}{3} \bullet \underline{\hspace{1cm}} \pi = \underline{\hspace{1cm}} m^3$$

2. (open)



Surface Area:

Volume:

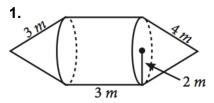
3. A closed hemisphere with radius $\sqrt{3}$ ft. (exact)

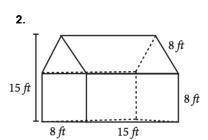
Surface Area:

Volume: _____

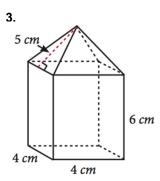
Surface Area and Volume of Composite Figures

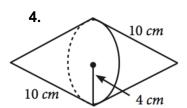
Find the total Surface Area and Volume of the following shapes.





Name: Date:





Name: Date:

