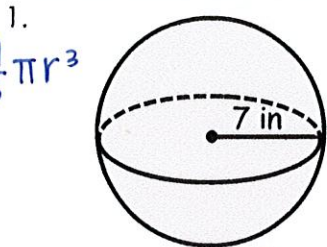


Name \_\_\_\_\_ Date \_\_\_\_\_

**Day 5 – Volume of Prisms, Pyramids, and Spheres**

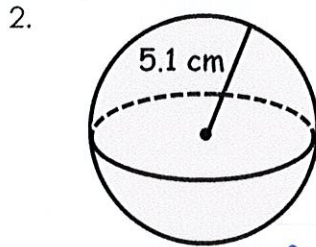
Find the volume of the sphere. Round your result to two decimal places.



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

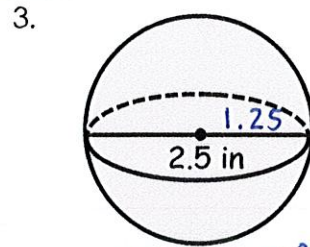
$V = \frac{4}{3} \pi 7^3$

$V = 1436.76 \text{ in}^3$



$V = \frac{4}{3} \pi 5.1^3$

$V = 555.65 \text{ cm}^3$



$V = \frac{4}{3} \pi 1.25^3$

$V = 8.18 \text{ in}^3$

In exercises 4 - 7, use the diagram at the right. The center of the sphere is C and its circumference is  $9\pi$  inches.

4. What is half of the sphere called?

hemisphere

5. Find the radius of the sphere.

$C = 2\pi r$

$\frac{9\pi}{2\pi} = \frac{2\pi r}{2\pi}$   
 $r = 4.5$

$r = 4.5 \text{ in}$

6. Find the diameter of the sphere.

$4.5 \cdot 2 = 9$

$d = 9 \text{ in}$

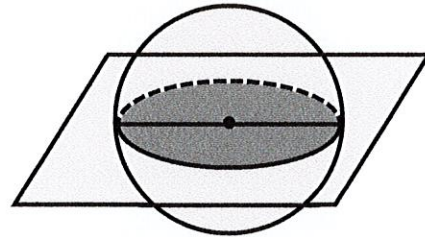
7. Find the volume of half the sphere.

$V = \frac{4}{3} \pi 4.5^3$

$381.70 / 2 = 190.85$

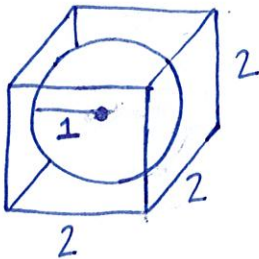
$V = 381.70 \text{ in}^3$

Volume of Hemisphere =  $190.85 \text{ in}^3$



8. A sphere is inscribed in a cube of volume 8 cubic meters. What is the volume of the sphere? Round your answers to two decimal places.

$\sqrt[3]{8} = 2$



$V = \frac{4}{3} \pi (1)^3 = 4.19$

$4.19 \text{ m}^3$

9. The volume of a sphere is  $240 \text{ in}^3$ . The radius is multiplied by 3 to form a new sphere. What would be the volume of the new sphere?

Volume Ratio

$a^3 : b^3$

$1 : 3$

$1^3 : 3^3$

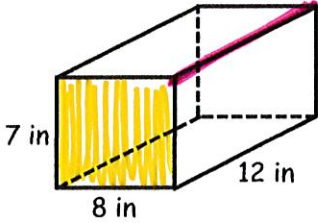
$3^3 = 27$

$240 \cdot 27 = 6480$

The volume would be 27 times as much, so  $6480 \text{ in}^3$

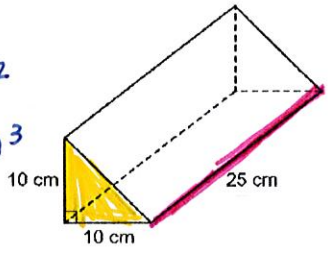
Find the volume of each of the following and round to the nearest tenth.  $V = B \cdot h$

1.  $B = \underline{56 \text{ in}^2}$   
 $V = \underline{672 \text{ in}^3}$



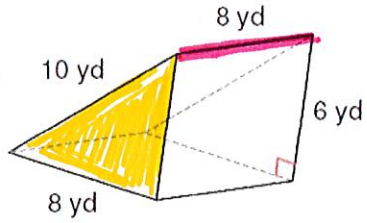
$B = l \cdot w$   
 $B = 7 \cdot 8 = 56$   
 $V = Bh$   
 $V = (56)(12) = 672$

2.  $B = \underline{50 \text{ cm}^2}$   
 $V = \underline{1250 \text{ cm}^3}$



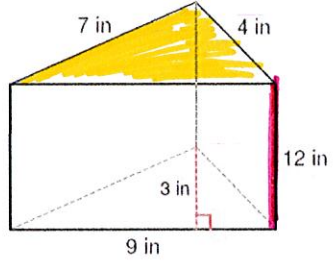
$B = \frac{1}{2}bh$   
 $B = \frac{1}{2}(10)(10) = 50$   
 $V = Bh$   
 $V = (50)(25) = 1250$

3.  $B = \underline{24 \text{ yd}^2}$   
 $V = \underline{192 \text{ yd}^3}$



$B = \frac{1}{2}bh$   
 $B = \frac{1}{2}(8)(6) = 24$   
 $V = Bh$   
 $V = (24)(8) = 192$

4.  $B = \underline{13.5 \text{ in}^2}$   
 $V = \underline{162 \text{ in}^3}$



$B = \frac{1}{2}bh$   
 $B = \frac{1}{2}(9)(3) = 13.5$   
 $V = Bh$   
 $V = (13.5)(12)$

"roof"

"bottom"

5.  $B_1 = \underline{6}$   
 $V_1 = \underline{48}$   
 $B = \frac{1}{2}bh$   
 $= \frac{1}{2}(3)(4)$   
 $= 6$   
 $V = Bh$   
 $= (6)(8)$   
 $= 48$

$B_2 = \underline{25}$   
 $V_2 = \underline{200}$   
 $B = l \cdot w$   
 $= 5 \cdot 5$   
 $= 25$   
 $V = Bh$   
 $= (25)(8)$   
 $= 200$

Total  $V = \underline{248 \text{ units}^3}$

