Geometry **Name:** _____

BRING THIS TO CLASS EVERY DAY!

Unit 8- Volume

Topics Covered:

- **Volume of a prism**
- **Volume of a pyramid**
- **Volume of a cylinder**
- **Volume of a cone**
- **Volume of a sphere**
- **Surface Area of a sphere**

HW #	Section/Topic	Problems	# of Problems	Date Assigned	Due Date
9	10.1 8.7 10.2	P 525 # 3, 5, 7, 9, 11, 13, 15, 17 P 466 # 2, 4, 6 P 533 # 1, 2, 3, 4	8 3 4		
10	10.3 10.2	P 540 # 1, 3, 10a, 10b, 10j, 10k P 534 # 7a, 7d, 7g, 7j, 11, 12	7 6		
11	10.7 10.6	P 563 # 1-5 P 559 # 1-6	5 6		
12		Unit 8- Volume- Study Guide			

Note: Figures are not to scale in notes.

REVIEW:

Determine if the following statements are TRUE or FALSE

TRUE or FALSE The area of a triangle is half the area of a rectangle with the same base and height.

TRUE or FALSE The area of a kite is one-half the sum of the diagonals.

TRUE or FALSE The circumference of a circle is the radius times pi.

TRUE or FALSE A triangular pyramid has a triangular base and three triangular faces that make the lateral area.

TRUE or FALSE The lateral area of cylinder is a rectangle.

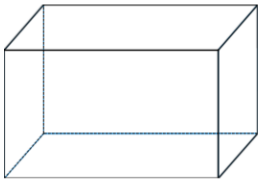
----------VOLUME OF PRISMS AND CYLINDERS (10.2) ----------

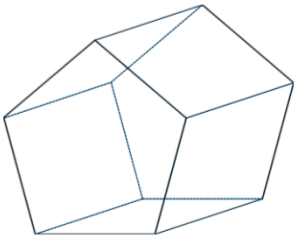
Volume:

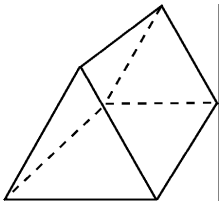
Important things to remember about volume:

-
-

Prisms:

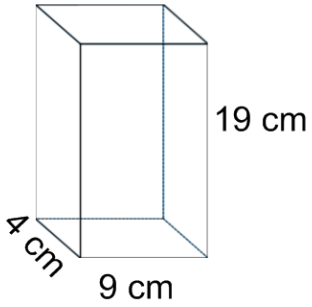




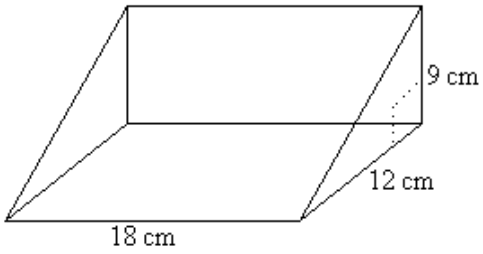


Volume of a Prism:

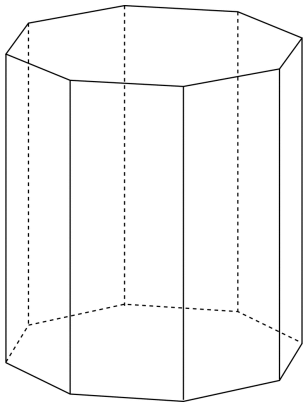
Example 1:Find the volume of the rectangular prism.



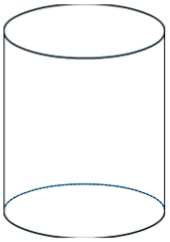
Example 2: **Find the volume of the triangular prism.**



Example 3: **Kandi's Candy has designed a new container to hold their best-selling KoKoNut candy. The container will be a prism with two octagon bases with side length of 4 cm and apothem of length 7.2 cm. The height of the container will be 8 cm. What will the volume of the container be? If each KoKoNut candy is 20 cm^3 in volume, how many candies could fit in the container?**



Cylinder:



Volume of a Cylinder

Example 4: **Find the volume of a cylinder with diameter of 4.6 in and height of 8.9 cm. Leave answer in terms of π.**

Example 5: Find the volume of a cylinder with circumference of 18π and height of 10. Leave answer in terms of π.

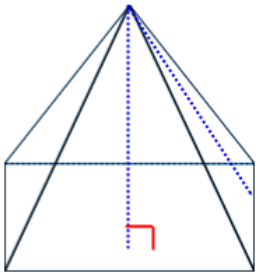
REVIEW

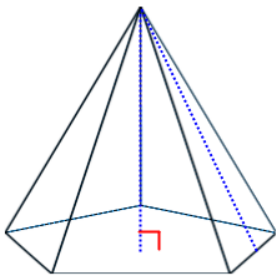
Solve each of the following proportions.

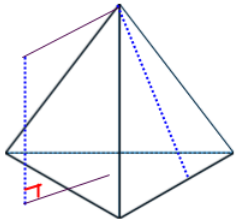
a) $\frac{x}{-5} = \frac{2}{7}$ b) $\frac{3x}{7} = \frac{2}{5}$ c) $\frac{(x+1)}{8} = \frac{5}{2}$

----------VOLUME OF PYRAMIDS AND CONES (10.3) ----------

Pyramid:





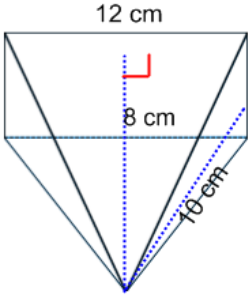


Volume of a Pyramid:

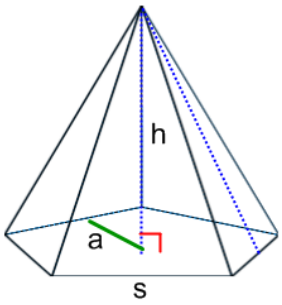
Example 1: Find the volume of the square prism.

Area of base:

Height:



V =



Example 2: **Find the volume of a pentagonal prism. The height, h, is 30 in. The side length, s, is 16 in. The apothem, a, is 1 in.**

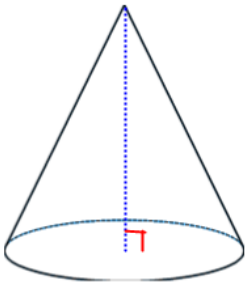
Remember! Area of a polygon: $\frac{1}{2}aP$

Area of Base:

Height:

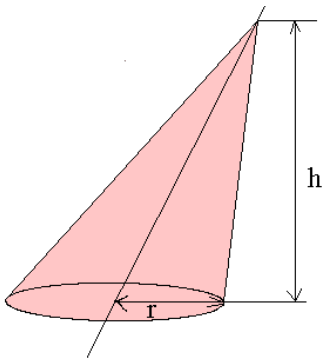
V=

Cone:



Volume of a Cone:

Example 3: **Find the volume of oblique cone where** $h = 3.2\ ft$ **and** $r = 1.2\ ft$**.**



Example 4: **Find the volume of a cone with circumference of 10π and height of 21.**

Your Turn!

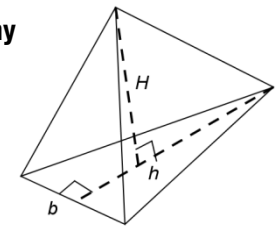
#1. Find the volume of the triangular prism given $h = 14\ m, b = 9\ m$ **and** $H = 10\ m.$

#2. Find the volume of a cone with height of 4cm and radius of 3.2 cm. Leave

#3. The Great Pryamid of Giza is a square pyramid that stands 455 ft tall. Each side of the

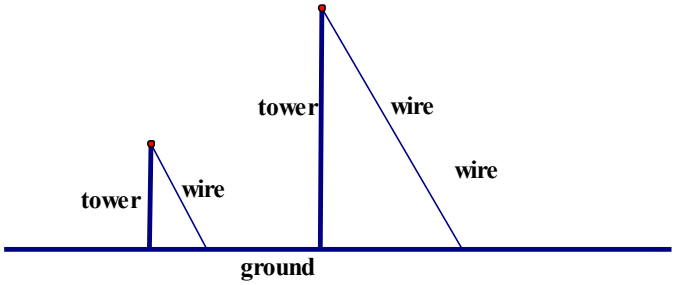
answer in terms of π.

Pyramid is 756 ft. How many



cubic feet of sand is the pyramid?

REVIEW



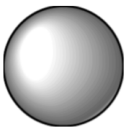
To support a 25 ft telephone tower a wire is attached to the top of the tower and to the ground 18 ft from the base of the tower.

a) **How long is the wire that runs from the top of the tower to the ground?**

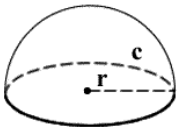
b) **A larger telephone tower will be constructed. The triangle formed by the tower, wire and ground will be similar to the 25 ft telephone tower. If the new tower is 50 ft tall, what will the distance from the bottom of the tower to the bottom of the wire be?**

----------SURFACE AREA AND VOLUME OF SPHERES (10.6/10.7) ----------

Sphere:



Hemisphere:



Surface Area of a Sphere:

Surface Area of a Hemisphere:

Volume of a Sphere

Volume of a Hemisphere

Example 1: Find the surface area and the volume of a sphere with diameter of 12 cm. Leave answer in terms of π.

Example 2: Find the surface area and volume of a hemisphere with radius of 3.2 in. Round answer to the nearest hundredth.

Example 3: The diameter of a basketball is 9.5 inches. Find the volume in cubic centimeters. (1 inch = 2.54 centimeters)

Example 4: A grain silo is a hemisphere on top of a cylinder. The height of the cylinder is 20 ft. The diameter of the silo is 8 ft. Find the volume of the grain silo.

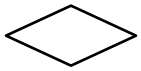
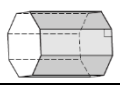
Volume of cylinder:

Volume of hemisphere:

Your Turn!

1) **The world's largest bubblegum bubble has a diameter of 50.8 cm. Assume the bubble was a sphere. What was the volume of the bubble? What was the surface area?**

2) **An ice cream cone is a cone with a hemisphere on top. If the cone is 3 inches tall and the radius of the cone is 1.4 inches, what is the volume of the ice cream cone?**

This is _____'s Formula Reference Sheet	
Area of Triangle: 	Surface Area of Cone: 
Area of Parallelogram: 	Surface Area of Sphere: 
Area of Trapezoid: 	Surface Area of Hemisphere: 
Area of Kite: 	Surface Area of a Cylinder:
Area of Regular Polygon: 	Volume of Pyramid: 
Circumference: 	Volume of Cone: 
Area of Circle: 	Volume of Sphere: 
Area of Sector: 	Volume of Prism: 

Area of Segment: 	Volume of a Cylinder:
Area of Annulus/Ring: