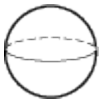
Name _____Period_____ Date_____

8th Grade Review for Volume of Cylinders, Cones & Spheres

Cluster: Solve real world and mathematical problems involving volume of cylinders, cones, and spheres.

MTH.8.NS.KTTN

Figure	Formulas for Volume *(V)*
Area of a Circle 	$A = \pi r^2$
Right Circular Cylinder 	***V* = *Bh* = area of base x height**
Right Circular Cone 	$V = \frac{1}{3}bh = \frac{1}{3}area\ of\ the\ base \times height$
Sphere 	$V = \frac{4}{3}\pi r^3 \quad or\ V = \frac{2}{3}\pi r^2 h$

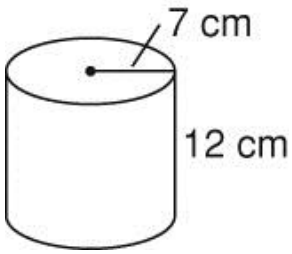
1. Find the volume of a cylinder with a diameter of 19 km and a height of 5 km in terms of π and using 3.14 for π. LABEL your answer!

The volume of the cylinder is _____.

2. Find the volume of the basketball in terms of π and using 3.14 for π. The diameter across the great circle is 28 cm. LABEL your answer!

The volume of the basketball is _____.

3. Find the volume of this figure in terms of π and using 3.14 for π. LABEL your answer!



The volume is _____

4. A cone has a diameter of 4 inches and a height of 7 inches. Find the volume of the cone in terms of π and using 3.14 for π. LABEL your answer!

The volume of the cone is _____

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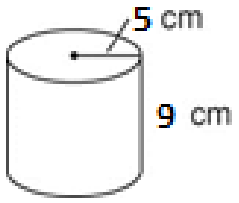
5. Find the volume of this figure in terms of π and using 3.14 for π. LABEL your answer!
(level 3/ proficient)

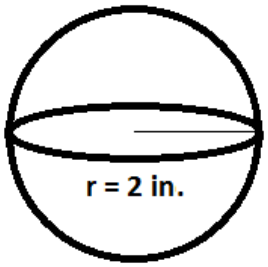


The volume is _____

6. A cone has a diameter of 6 inches and a height of 8 inches. Find the volume of the both in terms of π and using 3.14 for π. LABEL your answer! (level 3/ proficient)

The volume is _____

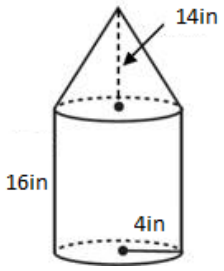
7. A baseball has a radius of 2 inches. What is the volume in cubic inches of the baseball? Find your answer in terms of π and using 3.14 for π. LABEL your answer!
(level 3/ proficient)



The volume is _____in terms of pi.

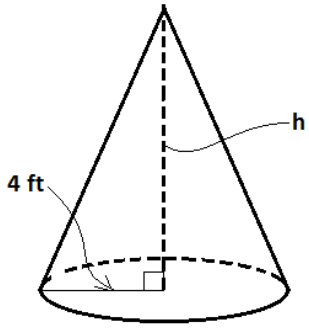
The volume is _____ (approximately)

8. Raymond built a "rocket" made from a cylinder and a cone. He filled the rocket completely with water. What is the maximum number of gallons of water the rocket can hold? Find your answer in terms of π and using 3.14 for π. (231 in^3 = 1 gallon) (level 3/ proficient)



The maximum number of gallons of water is _____.

9. A cone with radius of 4 feet is shown. Its approximate volume is $165ft^3$. Determine the height of the cone, in feet rounded to the nearest hundredth. Use 3.14 for π. LABEL your answer! (level 3/ proficient)



The height of the cone is _____.

10. A sphere has a volume of 457 $\frac{1}{3}\pi\ in^3$. What is the radius of the sphere?

(level 3/ proficient)

The radius is _____ inches.

11. Two tanks and their dimensions are shown.

Each tank is partially full of salt water. Design one cylindrical tank that will hold the water from both tanks, and be close to capacity. Draw and label your new tank. Justify the reasonableness of your design.
Use 3.14 for π. (level 4/ advanced)