

3.9: Volume of Spheres, Cones and Cylinders

Goals: *Find the volume of a sphere

*Find the volume of a cone

*Find the volume of cylinder

*Use volume formulas to find missing dimensions of spheres, cones and cylinders

*Use volume formulas to solve real-world problems involving spheres, cones and cylinders

Volume:

Units:

Formulas:

***CANNOT

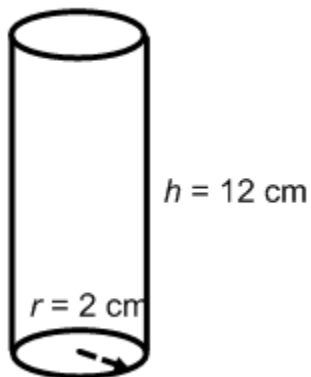
• Cylinder –

• Sphere –

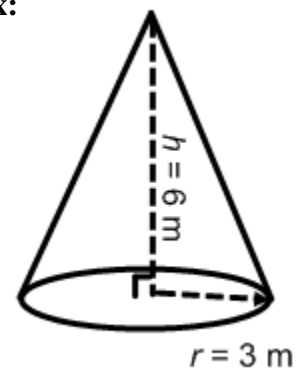
• Cone –

Use the formulas to find the volume of each shape. Round to the nearest tenth.

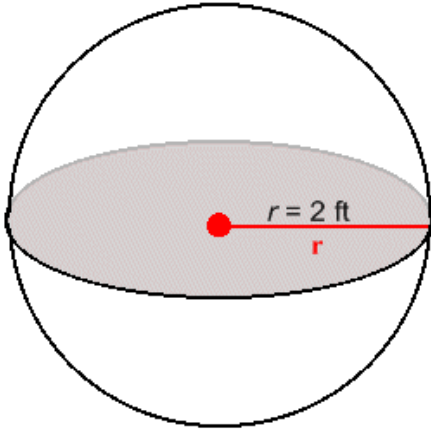
Ex:



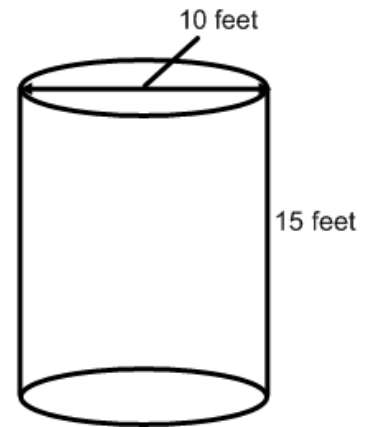
Ex:



Ex:



Ex:



Ex: A cone has a radius of 5 cm and a height of 12 cm. Find the volume of the cone.

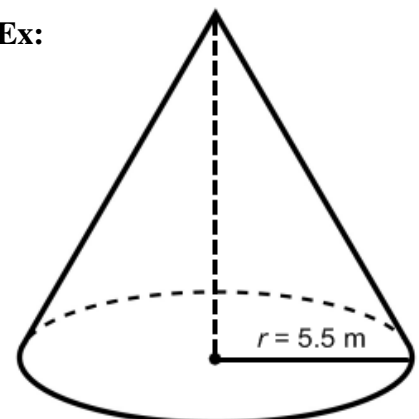
For each object, use the volume and appropriate formula to find the missing dimension.

Ex:



Volume = 381.51 in.^3

Ex:



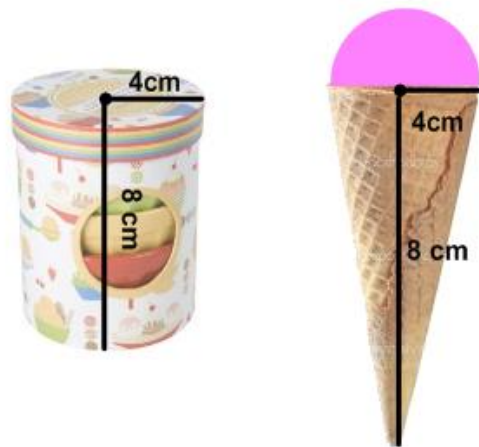
Volume = 253.4 m^3

Ex: A cylinder has a height of 8 feet and a volume of 1608.5 ft^3 . Find the radius of the cylinder.

Ex: Find the diameter of a cone that has a height of 15 meters and a volume of 565.5 m^3 .

Ex: The volume of a sphere is 113.04 in^3 . What is the radius of the sphere?

Ex: Esther and Jasmine each bought ice cream from Chilly's Ice Cream Parlor. Esther wanted a cone, while Jasmine got her in the cup shown. Who has more ice cream? By how much? (Assume Esther's cone is completely full of ice cream inside and that Jasmine's cup is filled to the top)



Ex: Esther's younger brother at home was upset that he couldn't go with the girls to get ice cream, so he made his own at home using the ice cream ball shown. Did he have more or less ice cream than his sister?



Ex: The swimming pool shown has a circumference of 62.8 feet. It is being filled at a rate of 2 cubic feet per minute. How long does it take to fill the swimming pool to its maximum height of 5 feet?

