

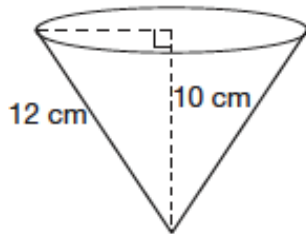
Lesson 3: MPM 1DI
Unit #7 - Measurement

(Part 2) Volume of Pyramids and Spheres

WARM-UP:

2 I CAN SOLVE PROBLEMS INVOLVING THE VOLUMES OF PRISMS, CYLINDERS, CONES, PYRAMIDS, AND SPHERES, INCLUDING COMPOSITE FIGURES.

a) Determine the volume of the cone.



- I'm an expert
- I need a bit more practice
- I will get extra help

(prism, cylinder)
p.413-14 #1-4, 6-8, 10, 15, 16

(cone)
p.421-23 #2a, 3b, 5, 7, 9, 11, 14, 15

(pyramid)
p.421-23 #1, 2bcd, 3a, 6, 8, 10, 12, 13, 16

(sphere)
p.427-28 #1, 2, 3ace, 4, 8-14, 16

Volume of a Pyramid is given by _____

Describe the relationship between the volume of a cone and the volume of a pyramid:

Example 1:

Determine the volume of a square-based pyramid with a side length of 2 m and a height of 80 cm.

Example 2:

Determine the volume of a hexagonal based pyramid with a height of 6 m and an apothem of 2.5 m.

Volume of a Cylinder is given by _____

The volume of a sphere is $\frac{2}{3}$ the volume of a cylinder with the same radius and height (where “height” is the diameter of the sphere).

Determine the formula for finding the volume of a sphere by starting with the volume of a cylinder:

∴ Volume of a Sphere is given by _____

Example 3:

Determine the radius of a sphere with a volume of 524cm^3 (to the nearest cm).

Example 4:

A cube shaped box fits around a sphere with a diameter of 15 cm so that the sphere touches all sides of the box. What is the volume of each 3D shape, and what percentage of the space does the sphere take up?