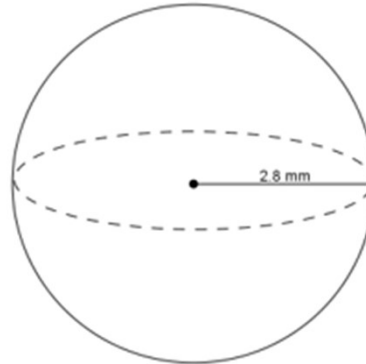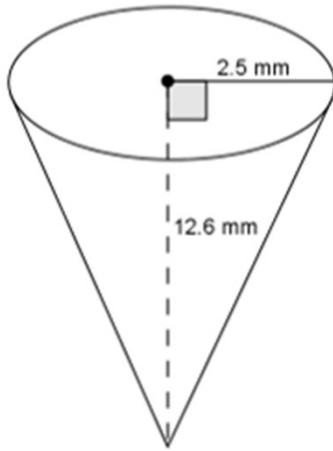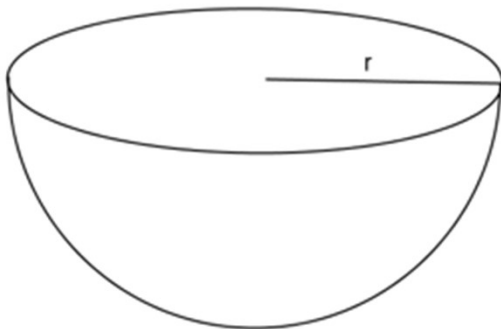# Volumes of Spheres

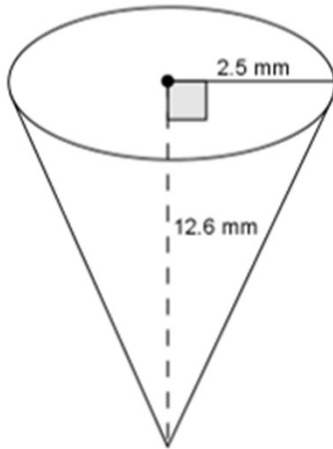1. Use the diagram to find the volume of each, and determine which has the greater volume.

2. One of two half spheres formed by a plane through the sphere's center is called a hemisphere. What is the formula for the volume of a hemisphere?

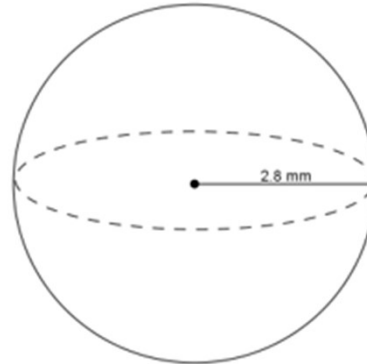# Volumes of Spheres

1. Use the diagram to find the volume of each, and determine which has the greater volume.

2.5 mm

12.6 mm

2.8 mm

$$V = \frac{1}{3}\pi r^2 h$$
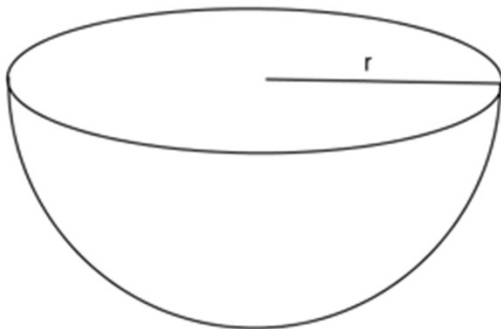$$V = \frac{1}{3}\pi(2.5^2)(12.6)$$
$$V = 26.25\pi$$

The volume of the cone is 26.25π mm³.

$$V = \frac{4}{3}\pi r^3$$
$$V = \frac{4}{3}\pi(2.8^3)$$
$$V = 29.269333\ldots\pi$$

The volume of the sphere is about 29.27π mm³. The volume of the sphere is greater than the volume of the cone.

2. One of two half spheres formed by a plane through the sphere's center is called a hemisphere. What is the formula for the volume of a hemisphere?

r

Since a hemisphere is half a sphere, the volume(hemisphere) $= \frac{1}{2}$ (volume of sphere).

$$V = \frac{1}{2}\left(\frac{4}{3}\pi r^3\right)$$
$$V = \frac{2}{3}\pi r^3$$

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