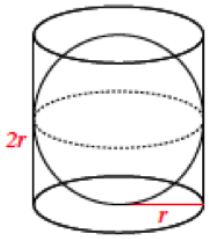
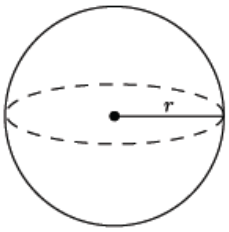
Lesson Summary

The formula to find the volume of a sphere is directly related to that of the right circular cylinder. Given a right circular cylinder with radius r and height h, which is equal to $2r$, a sphere with the same radius r has a volume that is exactly two-thirds of the cylinder.

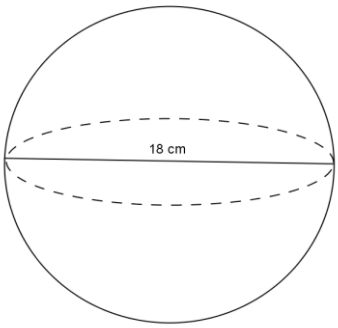


Therefore, the volume of a sphere with radius r has a volume given by the formula $V = \frac{4}{3}\pi r^3$.

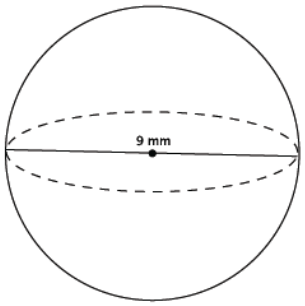


Problem Set

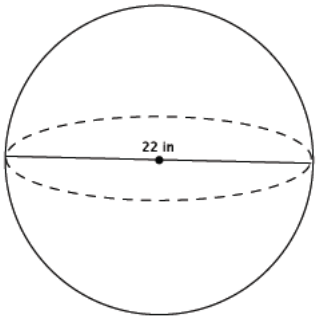
1. Use the diagram to find the volume of the sphere.



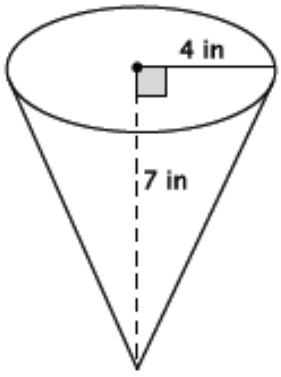
2. Determine the volume of a sphere with diameter 9 mm, shown below.

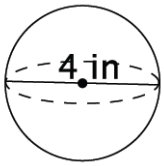


3. Determine the volume of a sphere with diameter 22 in., shown below.

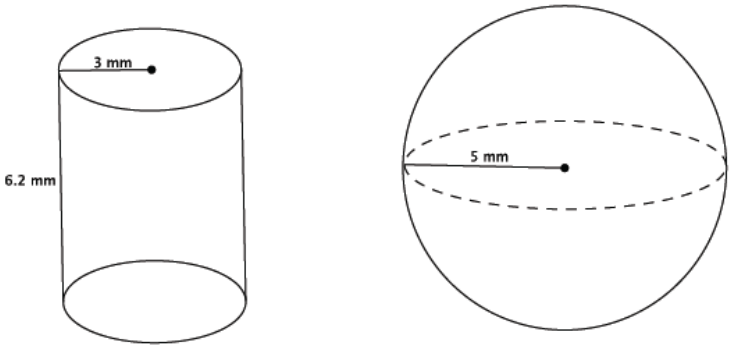


4. Which of the two figures below has the lesser volume?





5. Which of the two figures below has the greater volume?



6. Bridget wants to determine which ice cream option is the best choice. The chart below gives the description and prices for her options. Use the space below each item to record your findings.

$2.00	$3.00	$4.00
One scoop in a cup	Two scoops in a cup	Three scoops in a cup
Half a scoop on a cone filled with ice cream		A cup filled with ice cream (level to the top of the cup)

A scoop of ice cream is considered a perfect sphere and has a 2-inch diameter. A cone has a 2-inch diameter and a height of 4.5 inches. A cup, considered a right circular cylinder, has a 3-inch diameter and a height of 2 inches.

a. Determine the volume of each choice. Use 3.14 to approximate π.

b. Determine which choice is the best value for her money. Explain your reasoning.