Volume of a Cylinder

Name: _____

Exercise Set

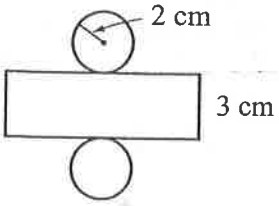
1. Find the volume of the cylinder with the given dimensions. Give exact answers and approximations to two decimal places.

a) $r = 3$ cm
$h = 5$ cm

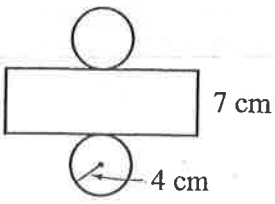
b) $r = 7$ cm
$h = 5$ cm

2. Find the volume of the cylinder formed by each net. Leave the answer in terms of π.

a)

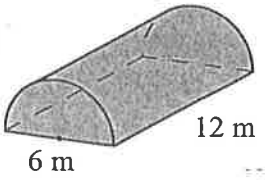


b)

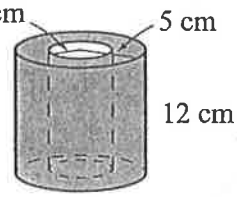


3. Find the volume of each figure. Leave the answer in terms of π.

a)

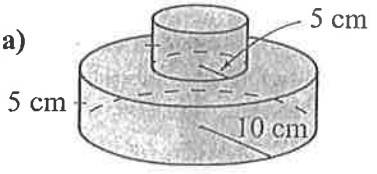


b)

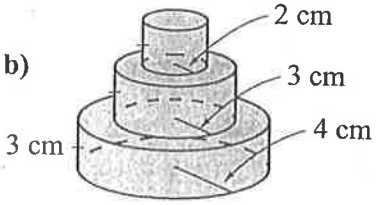


4. Find the volume of each compound cylinder.

a)



b)



5. Find the volume of a cylinder inscribed in a cube with the given sides.

   a) 8 cm

   b) 5 m

6. Find the volume of a cylinder with the given measurements.

   a) height = 8 cm, circumference = 8π cm

   b) height = 6 m, circumference = 12π m

7. If cylinder A has a diameter of 6 cm, with a height of 4 cm, and cylinder B has a diameter of 4 cm with a height of 6 cm:

   a) Which cylinder has the greatest volume? By what amount?

   b) What new height of cylinder B would make its volume is the same as cylinder A?

8. Cylinder A is twice as wide as cylinder B, but only half the height. What is the relation of their volumes?

9. A solid metal cylinder with radius 6 cm and height 18 cm is melted down to form a solid cube. Find the length of the sides of the cube to two decimal places.

10. Find the volume of a chocolate cake with a diameter of 20 cm and a height of 6 cm, if the cake is missing a slice whose centre angle measures 60°.

11. A cylinder and rectangular prism have the same volume. The rectangular prism has a length of 4π, and a height the same as the cylinder. If the cylinder has a radius of 6 cm, what is the width of the prism?