

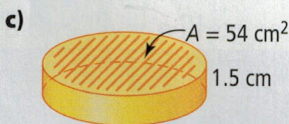
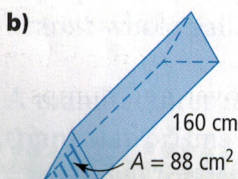
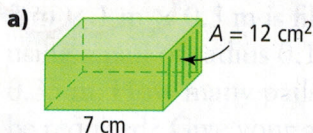
Key Words

For #1 to #4, choose the letter representing the term that best matches each statement.

- the amount of space an object occupies
 A height
 B volume
 C base of a prism
 D orientation
- a particular view of an object
 C base of a prism
 D orientation
- the distance between the two bases of a prism
- the face that is perpendicular to the height of a prism

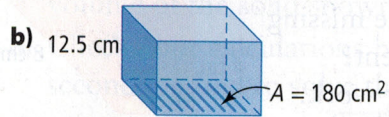
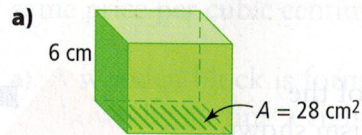
7.1 Understanding Volume, pages 246–253

5. What is the volume of each right prism or cylinder?



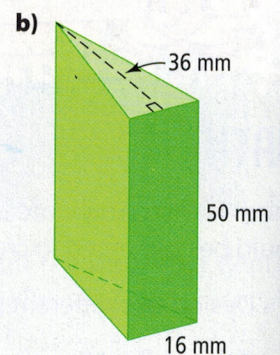
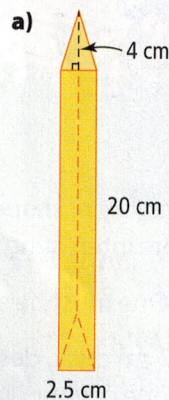
6. Determine the volume of each right prism.
- area of base = 6 cm^2 , height = 4 cm
 - area of base = 20 cm^2 , height = 2 cm
 - height = 10 cm, area of base = 15 cm^2
7. Stephan uses 28 centimetre cubes to make the base of a rectangular prism. What is the volume if the prism has seven layers of cubes?

8. Determine the volume of each right rectangular prism.



7.2 Volume of a Prism, pages 254–261

9. What is the volume of each cube?
- edge length = 10 cm
 - edge length = 8.5 cm
10. What is the volume of each right rectangular prism?
- $l = 12 \text{ cm}$, $w = 2 \text{ cm}$, $h = 5 \text{ cm}$
 - $l = 2.5 \text{ cm}$, $w = 8 \text{ cm}$, $h = 3.5 \text{ cm}$
11. What is the volume of each right triangular prism?



12. A cube-shaped tank of 1 m by 1 m by 1 m contains water to a depth of 0.4 m. Determine the volume of the air in the tank.

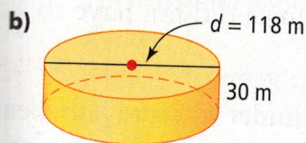
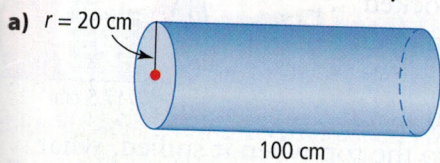
13. On a construction site, earth is being excavated to a depth of 12 m from a rectangular pit measuring 85 m by 54 m. The earth is being removed by dump trucks that have a capacity of 42 m^3 of earth, and can transport five loads each hour.

- Calculate the volume of earth being excavated.
- How many truckloads will be needed to remove the earth?
- If four trucks work non-stop for a 6-h day, how many days are needed to remove all the earth? Express your answer to the nearest whole day.



7.3 Volume of a Cylinder, pages 262–267

14. What is the volume of each cylinder?

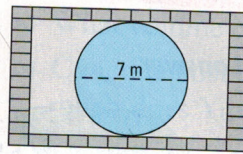


15. What is the volume of each cylinder?

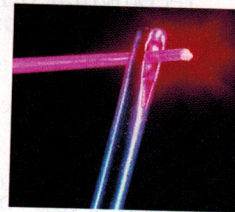
- $r = 6 \text{ cm}$, $h = 20.5 \text{ cm}$
- $d = 18 \text{ cm}$, $h = 18 \text{ cm}$

16. What is the volume of a cylindrical pipe that is 20 m long and has an inside diameter of 3 m?

17. Jane wants to fill her circular pool to a depth of 2 m. Determine the volume of water she needs, to the nearest cubic metre.



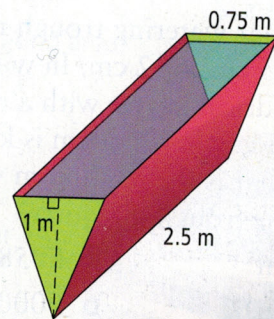
18. Fibre optic filaments are very small. An R Sensor Probe is 152.4 mm long with a diameter of 1.587 mm. What is its volume?



Give your answer to the nearest tenth of a cubic millimetre.

7.4 Solving Problems Involving Prisms and Cylinders, pages 268–275

19. A cylinder with a radius of 0.28 m and a length of 7 m is to be replaced with a cylinder of radius 0.25 m. The volume must remain the same. How long must the new cylinder be? Give your answer to the nearest hundredth of a metre.
20. At Wacky Water Park, a large trough fills with water at a rate of 0.6 m^3 per minute. When it is full, it tips over and dumps its contents.



- What is the volume of water when the trough is full?
- How long does it take for the trough to fill with water? Give your answer in minutes and seconds.