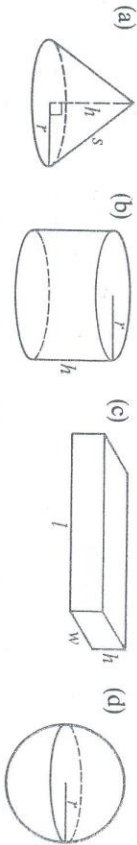


10.6 Exercise Volume: Prisms, Pyramids, Cylinders, Cones & Spheres

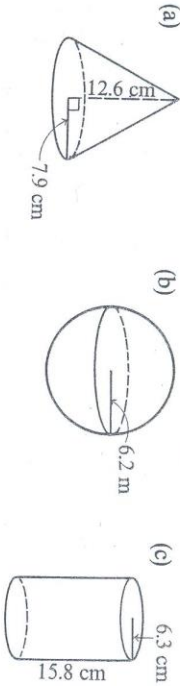
A Review the various formulas to find surface area and volume. What measures do the variables in each formula represent?

1 Write the formula that you would use to calculate the surface area of each of the following.

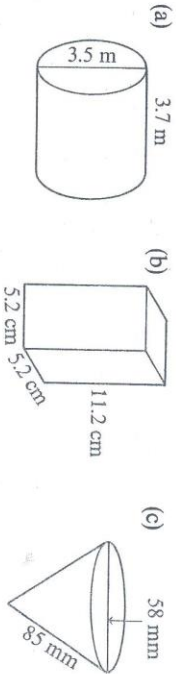


2 Write the formula that you would use to calculate the volume of each shape in the previous question.

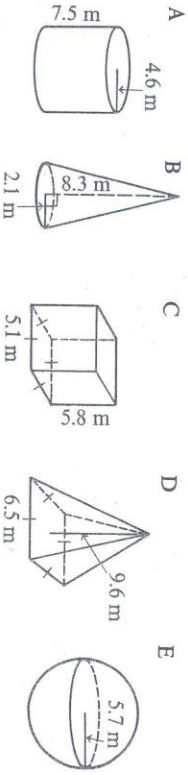
3 Calculate the volume of each of the following.



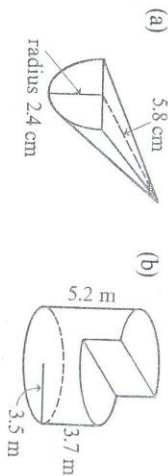
4 Find the surface area of each shape.



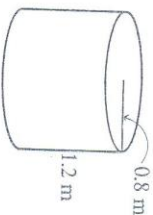
5 (a) Predict which container holds the most.
 (b) Arrange the containers in order from the one that holds the most to the one that holds the least.



B 6 Find each volume.

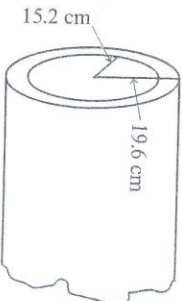


7 A rectangular pool has dimensions 10.6 m long, 6.2 m wide and 2.1 m deep.
 (a) The water level is 22.5 cm below the edge of the pool. Calculate the volume of water in the pool.
 (b) Each day it costs $3.296/m^3$ to maintain the pool. Calculate the total cost of maintaining the pool from May 24 to September 18.



8 The cylindrical container is full of liquid plastic.

(a) Calculate the volume of liquid plastic.
 (b) Billiard balls, with a diameter of 5.7 cm, are made from the plastic. How many can be made from one container of liquid plastic?



9 A concrete drainage pipe has an inner radius of 15.2 cm and an outer radius of 19.6 cm.
 (a) Calculate the number of litres of water that a pipe 6.0 m in length can hold.
 (b) If the material used to make the pipe has a mass of $12.6 g/cm^3$ find the mass of the pipe in (a).

10 For each of the following \blacktriangleright guess what you think the final result will be \blacktriangleright then show what actual result occurs.

(a) A cylinder has the radius cut in half and the height doubled. What change occurs to the volume?
 (b) A cone has the radius cut in half and the height doubled. What change occurs to the volume?

SOLUTIONS

- 10.6 Exercise, page 379
 3.a) 820 cm^3 b) 1000 m^3 c) 2000 cm^3 4.a) 145 m^2 b) 287 cm^2
 c) 10000 mm^2 5.b) E, A, C, D, B 6.a) 17 cm^3 b) 170 m^3
 7.a) 123 m^3 b) $\$477.51$ 8.a) 2.4 m^3 b) 25000 9.a) 435 L b) 3630 kg
 10.a) volume is halved b) volume is halved