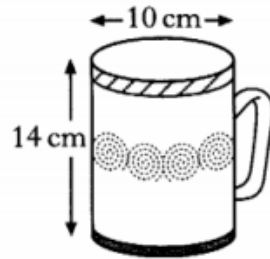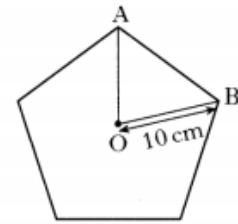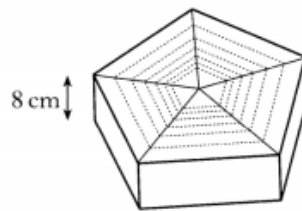4. A mug is in the shape of a cylinder with diameter 10 centimetres and
    height 14 centimetres.

(a) Calculate the capacity of the mug.   2

(b) 600 millilitres of coffee are poured in.

    Calculate the depth of the coffee in the mug.   3

Q9. A gift box, 8 centimetres high, is prism shaped.

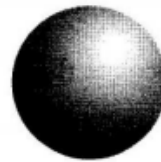

The uniform cross-section is a regular pentagon.

Each vertex of the pentagon is 10 centimetres from the centre O.

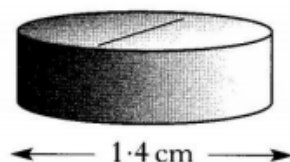Calculate the volume of the box.   5

7. A pharmaceutical company makes vitamin pills
    in the shape of spheres of radius 0.5 centimetres.

(a) Calculate the volume of one pill.
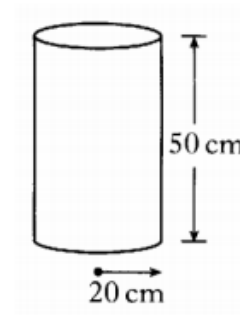   Give your answer **to 3 significant figures**.   3

The company decides to change the shape of each pill to a cylinder.

The new pill has the same volume as the original and its diameter is 1.4 centimetres.

(b) Calculate the height of the new pill.   3

6. A drinks container is in the shape of a cylinder with radius 20 centimetres and height 50 centimetres.

(a) Calculate the volume of the drinks container.
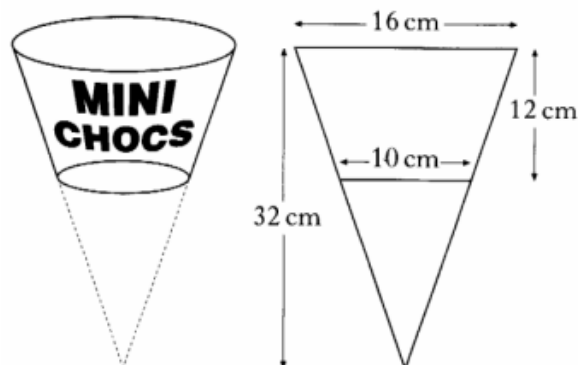Give your answer in cubic centimetres, correct to two significant figures.

3

(b) Liquid from the full container can fill 800 cups, in the shape of cones, each of radius 3 centimetres.

What will be the height of liquid in each cup?

4

5. A container to hold chocolates is in the shape of part of a cone with dimensions as shown below.

Calculate the volume of the container.

Give your answer correct to one significant figure.

5