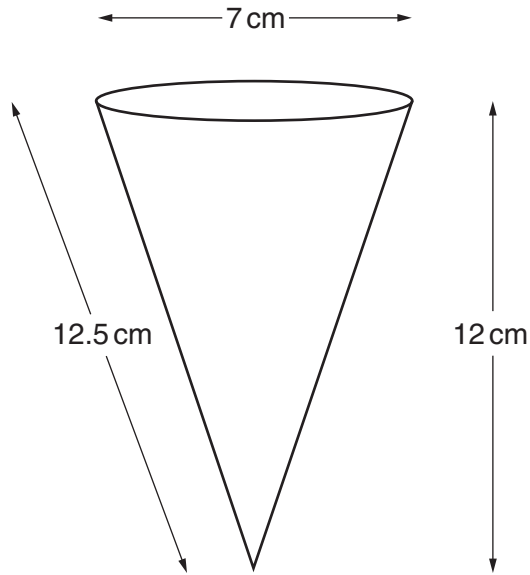**1** Here is an ice cream cone.

The cone is filled with ice cream so that the ice cream is level with the top of the cone.

Calculate the area of the wrapper used to **completely** cover the cone and the ice cream.

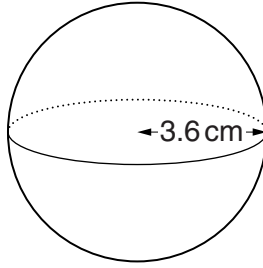.. cm^2 **[3]**

2 A spherical football has a **circumference** of 60 cm.

Calculate the surface area of the football.
Give your answer in its simplest form, in terms of π.

.... cm^2 **[5]**

3   A cricket ball is a sphere of radius 3.6 cm.

←3.6 cm→

(a) Work out the volume of the cricket ball.
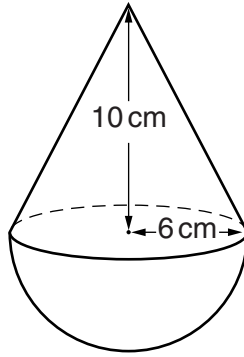
(a) .... cm^3 **[2]**

(b) The mass of the cricket ball is 160 g.

Work out the density of the cricket ball.
Give the units of your answer.

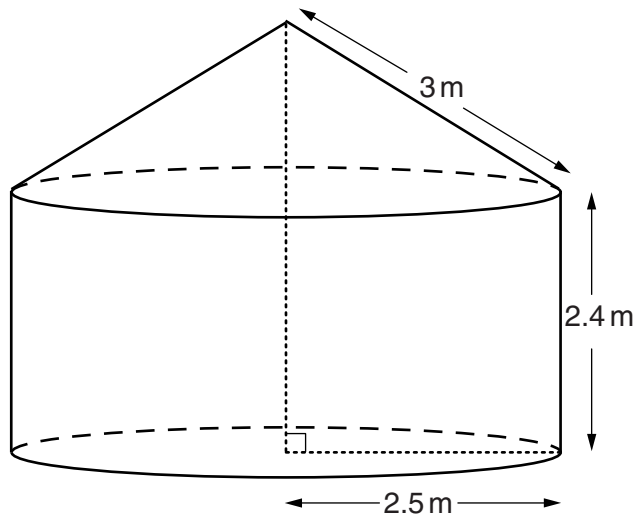(b) .... **[3]**

4 This child's toy is made by attaching a hemisphere to a cone.

Calculate the total volume of the toy.
Give your answer as a multiple of π.

_____ cm³ **[5]**

5   The diagram shows a tent.

The base of the tent is a circle of radius 2.5 m.
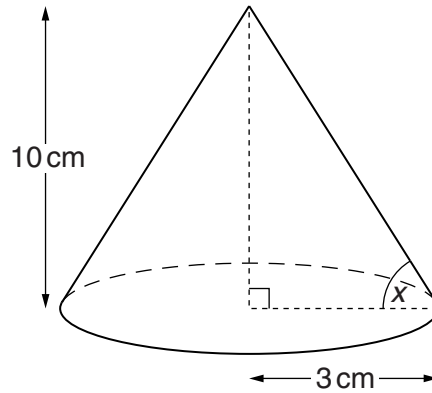The walls are vertical and are 2.4 m high.
The roof of the tent is a cone of slant height 3 m.
The material to make the tent costs £8.99 per square metre.

Work out the total cost of the material needed to make the walls and roof of the tent.
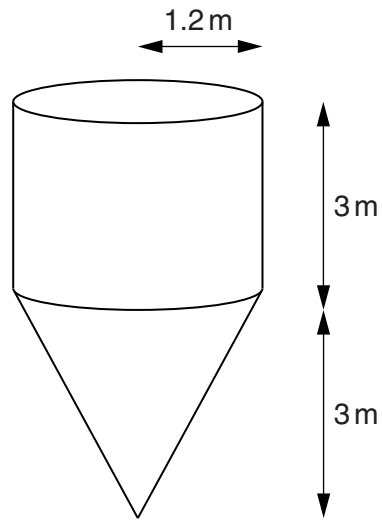
£ _____ **[5]**

6 Here is a cone.

(a) Work out the volume of the cone.

(a) _____ cm^3 **[2]**

(b) Work out angle x, the angle between the slant height of the cone and the base.

(b) _____ ° **[3]**

7   A grain store is a hollow cylinder joined to a hollow cone.
The cylinder and cone each have radius 1.2 m and height 3 m.

1.2 m

3 m

3 m

The grain store is full of grain.
The grain has a density of 0.79 tonnes per cubic metre.

Work out the total mass of the grain.

_____ tonnes **[7]**