

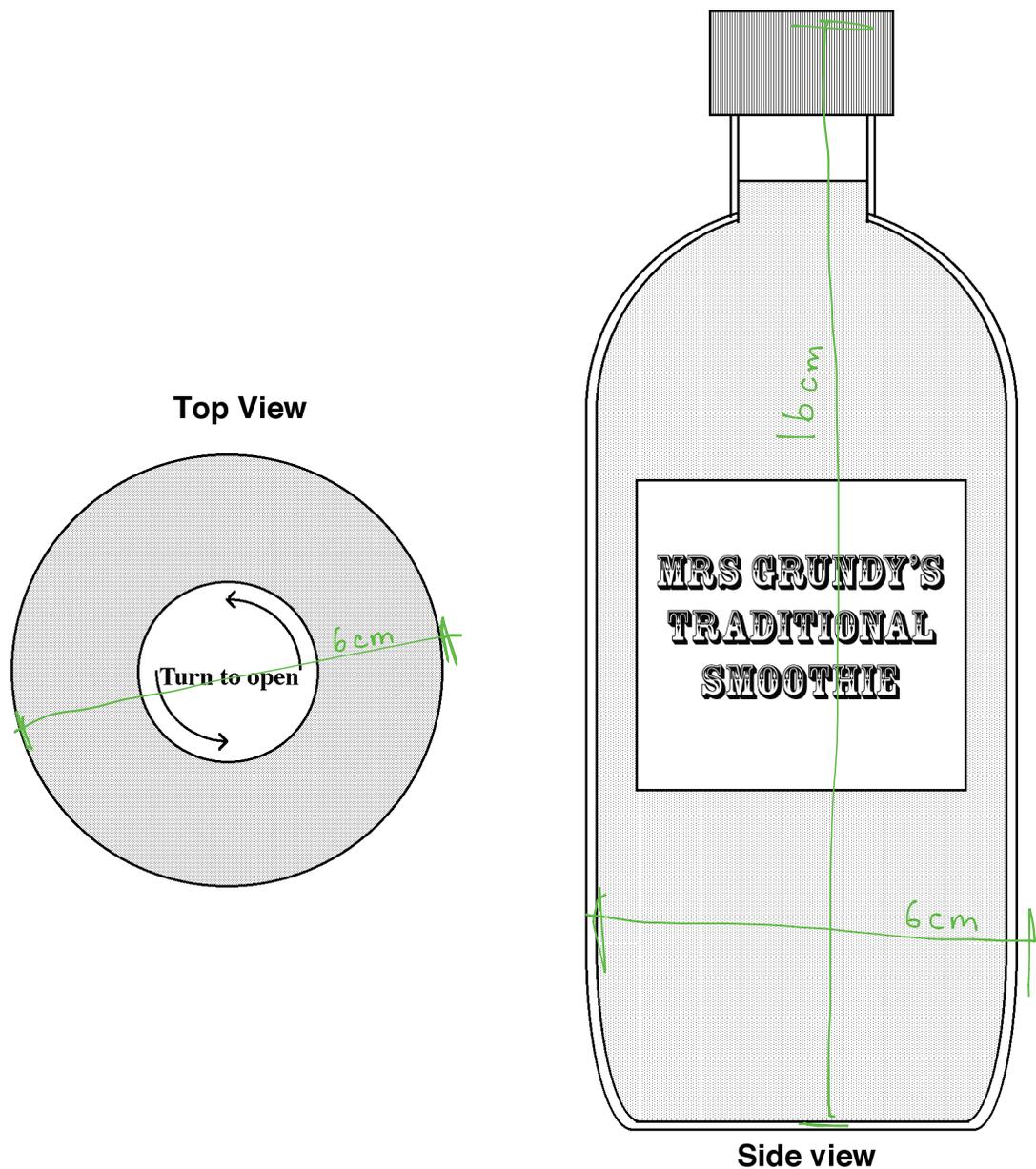
## SMOOTHIE BOX

Mrs. Grundy is planning to package and sell her special home made smoothies. These pictures show the top and side views of the type of bottle she plans to use. They are drawn accurately, full size.

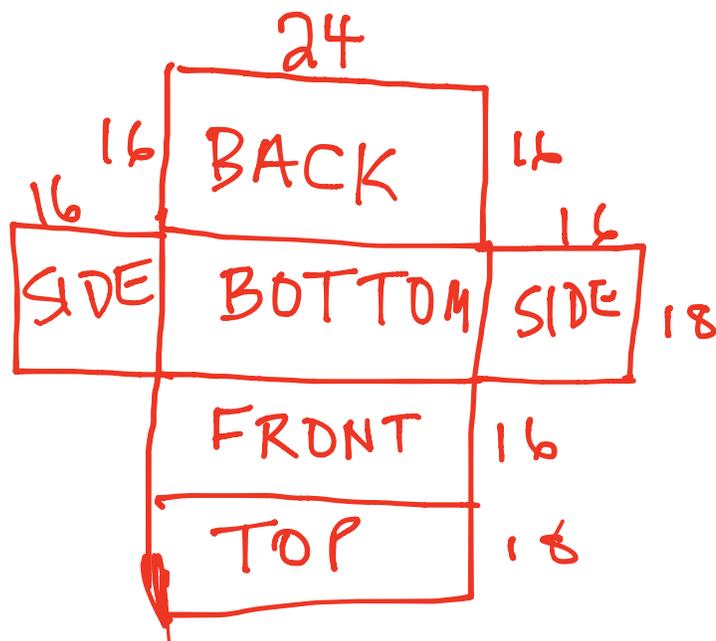
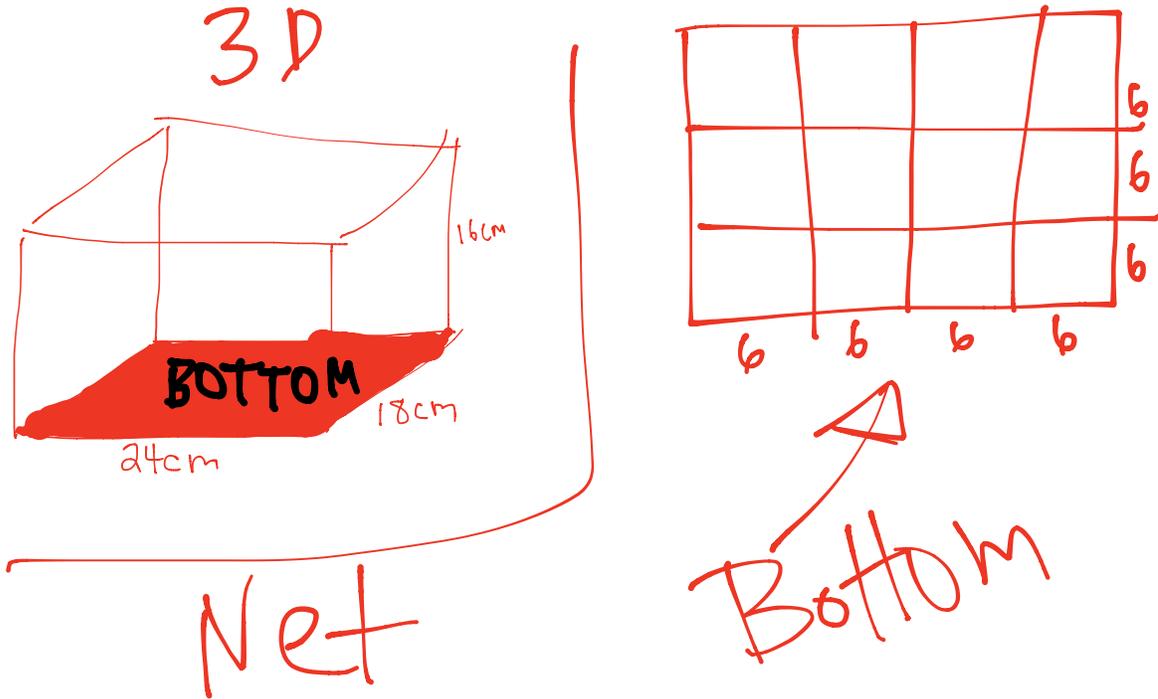
Design a net for a box that will hold **twelve** bottles.

The box should be a tight fit, so that the bottles will not rattle about.

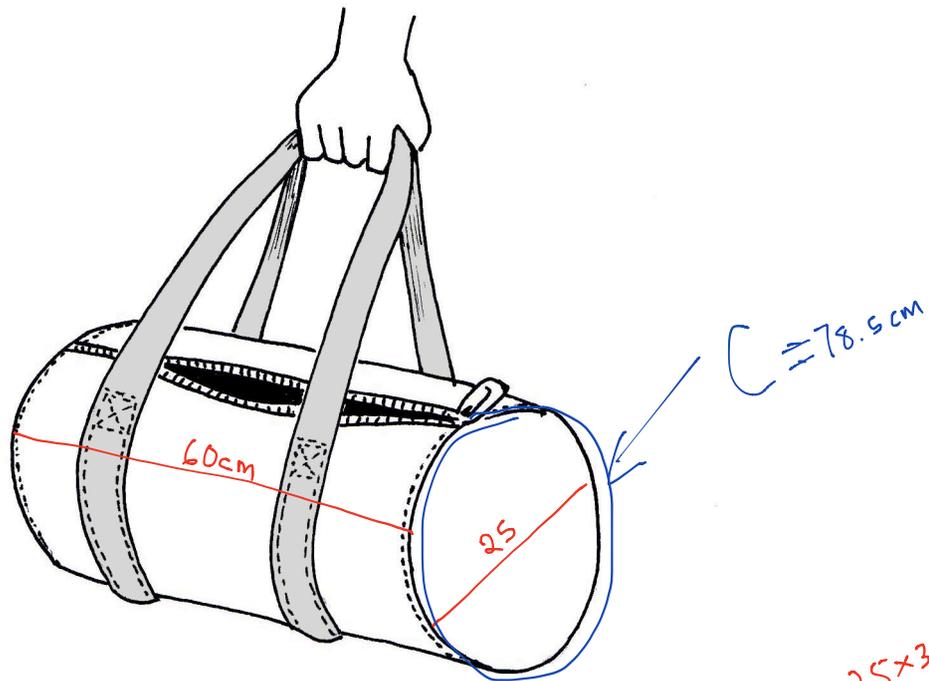
You do not have to draw the net accurately, but you must label your net to show all the measurements you need.



The smoothie bottle has a diameter of 6cm and a height of 16cm. This means that a box will have to be 16 cm in height. The dimensions of the bottom of the box will have to fit either 1x12, 2x6 or 3x4 bottles...the logical way to fit the bottles in to me seems to be 3x4 bottles...so the dimensions of the bottom of the box would have to be 3(6) x 4(6) or 18cm x 24cm. See the 3D diagram below and then the net.



## SPORTS BAG



You have been asked to design a sports bag.

- The length of the bag will be 60 cm.
- The bag will have circular ends of diameter 25 cm.
- The main body of the bag will be made from 3 pieces of material; a piece for the curved body, and the two circular end pieces.
- Each piece will need to have an extra 2 cm all around it for a seam, so that the pieces may be stitched together.

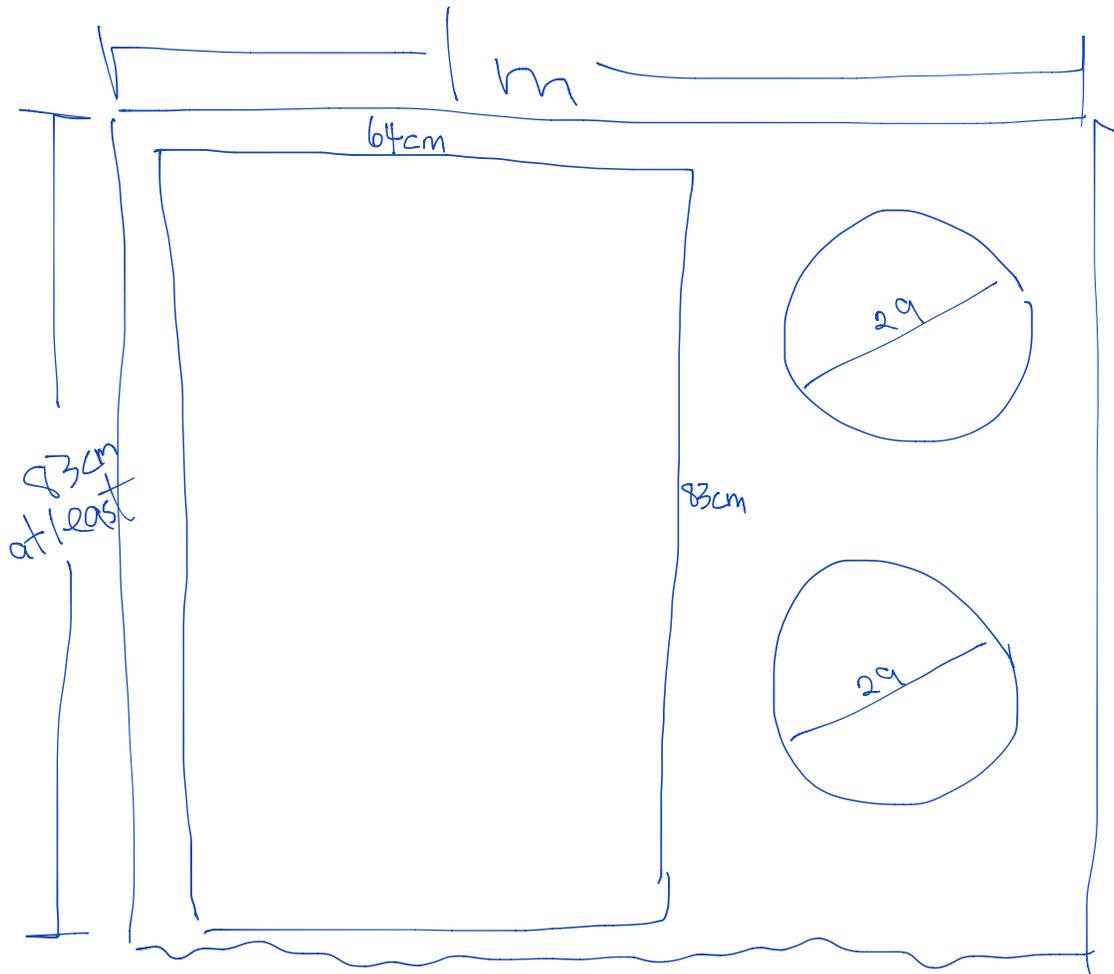
1. Make a sketch of the pieces you will need to cut out for the body of the bag. Your sketch does not have to be to scale.

On your sketch, show all the measurements you will need.

2. You are going to make one of these bags from a roll of cloth 1 metre wide. What is the shortest length that you need to cut from the roll for the bag? Describe, using words and sketches, how you arrive at your answer.

The two circular end pieces will need to be a diameter of 29 inches because each pieces needs to have an extra 2cm border.

The curved body will actually be a rectangle that is 60 cm wide and will have the length of the circumference of the circle (78.5 cm). With a two inch border all around, the dimensions of the curved body need to be 64 x 82.5 cm.



The cloth will be one meter long and should be at least 83 cm wide. This will allow the curved body to be cut the long way, and along side 64 cm side, you will be able to cut out 2 circles each with a diameter of 29 cm.