

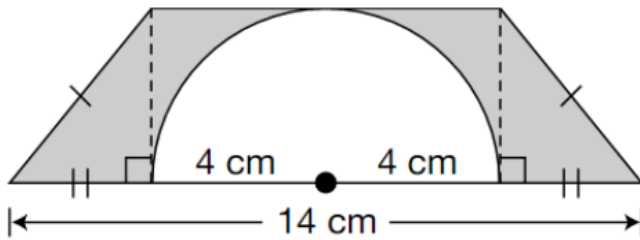
## MPM1D – Measurement TIPS Assignment

Each question will be given a grade out of 5 for a total of 50 marks.

**\*\*\*SHOW ALL OF YOUR WORK FOR FULL MARKS\*\*\***

A correct answer with no work shown earns 1/10.

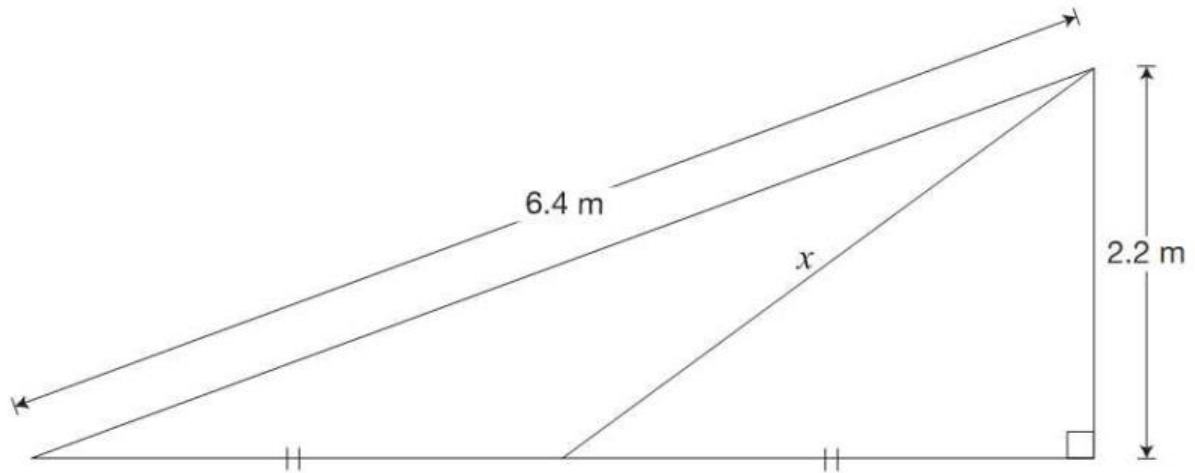
The semicircle in the diagram below has a radius of 4 cm.



What is the area of the shaded region?

Show your work.

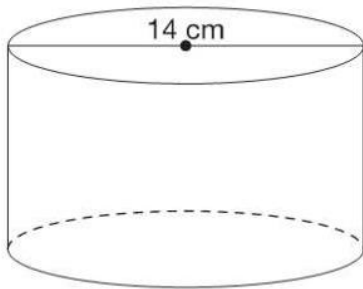
The diagram below shows a small right triangle inside a large right triangle.



Determine the value of  $x$ .

Show your work.

The cylinder pictured below has a surface area of  $660 \text{ cm}^2$ .

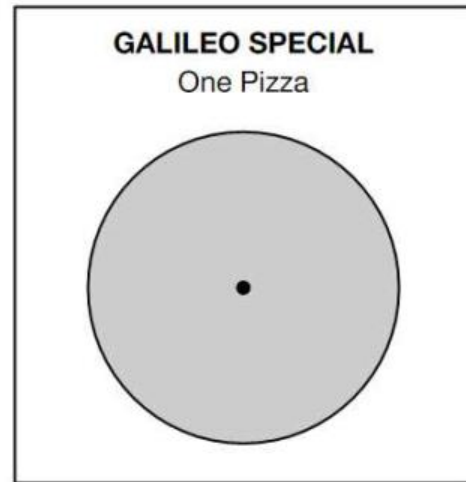
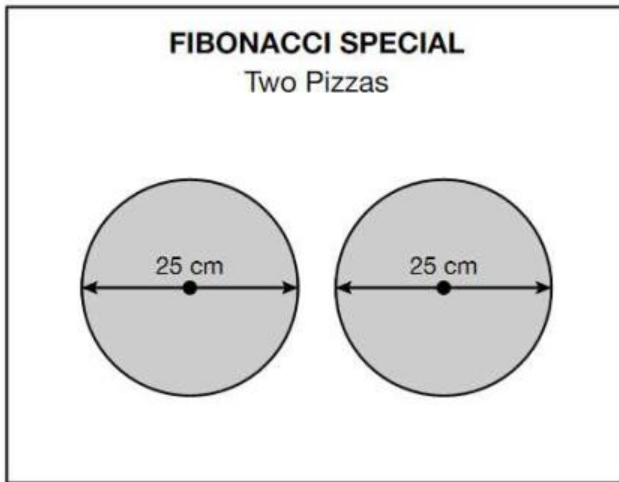


Use the following formula to determine the height of the cylinder:

$$\text{Surface area} = 2\pi r^2 + 2\pi rh$$

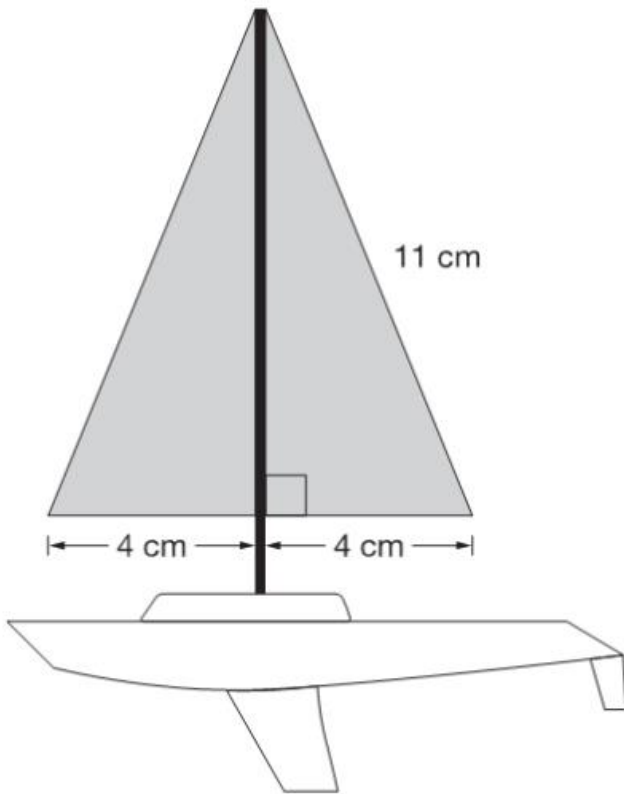
Show your work.

One weekend, a pizza shop offers two specials for the same price. The pizzas are all the same thickness.



Determine the diameter of the Galileo Special if the two specials contain the same amount of pizza. Show your work.

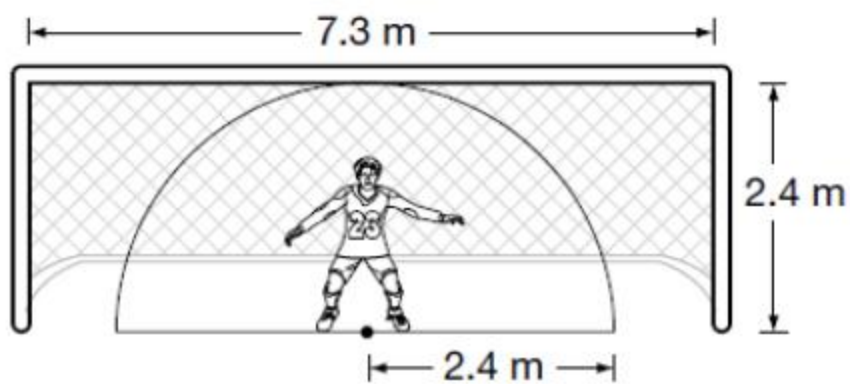
Emelina makes toy sailboats as shown below.



Determine the total area of the shaded sails.

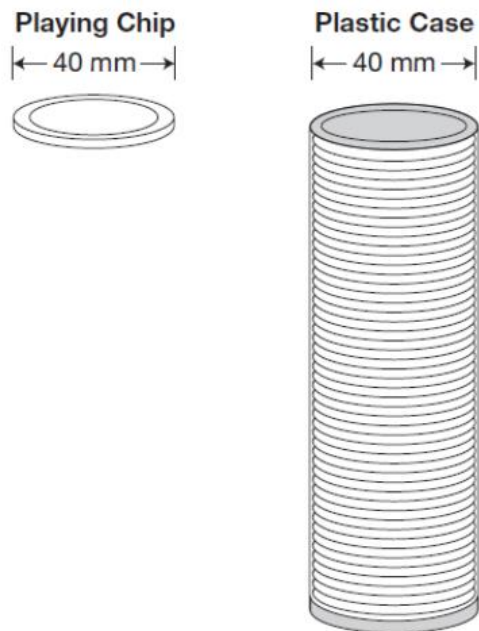
Show your work.

A soccer goalie is standing in a goal opening. From this position, she can guard the area represented by the semicircle below.



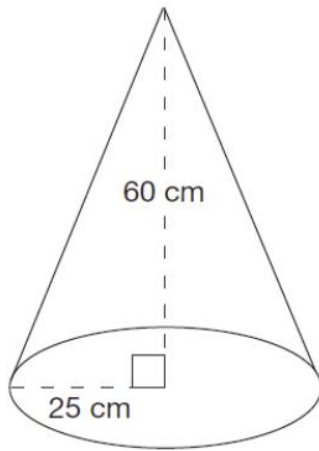
How much of the goal opening is she not guarding?

The playing chips of a board game are stored in cylindrical plastic cases. The plastic cases have a volume of  $25\,120\text{ mm}^3$  and a diameter of  $40\text{ mm}$ .



What is the height of 1 playing chip if 50 playing chips fit tightly into the plastic case as shown above?

A pylon in the shape of a cone is shown below.

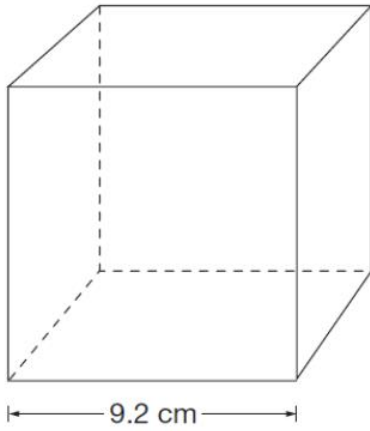


The outside surface of the cone is to be painted, but the bottom will not be painted.

What is the total surface area to be painted?



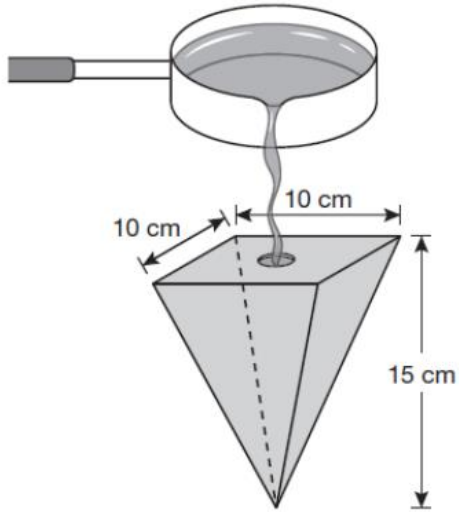
A decoration is packed in a box shaped like a cube as shown below.



The decoration has a volume of  $651 \text{ cm}^3$ .

How much empty space remains in the box?

The mould shown below is used to make a candle in the shape of a square-based pyramid.



What is the volume of the mould?