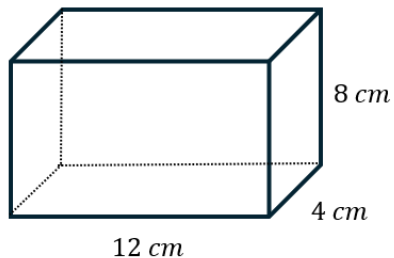
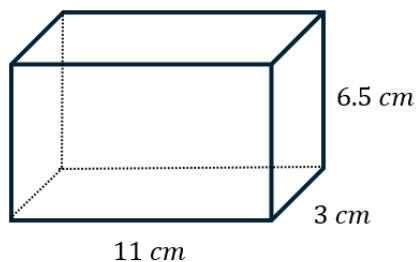


# SURFACE AREA OF PRISMS

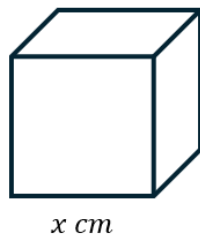
- 1) Work out the total surface area of the cuboid shown below.



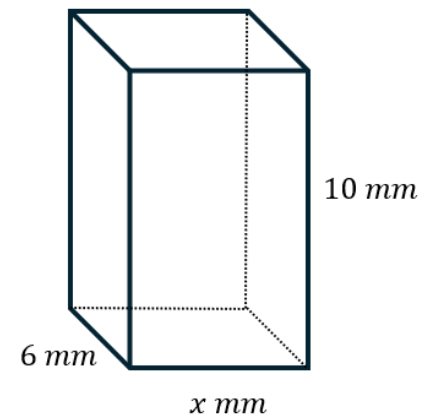
- 2) Work out the total surface area of the cuboid shown below.



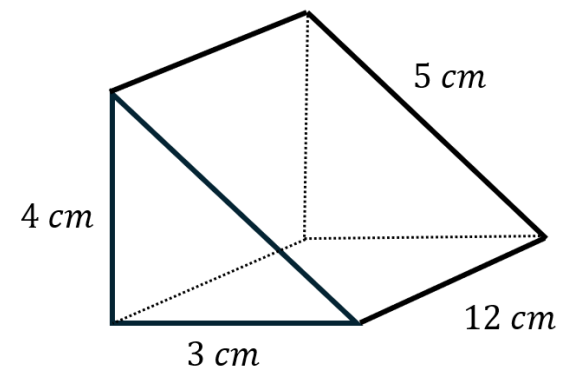
- 3) A cube has a volume of  $125\text{ cm}^3$ . Work out the total surface area of the cube.



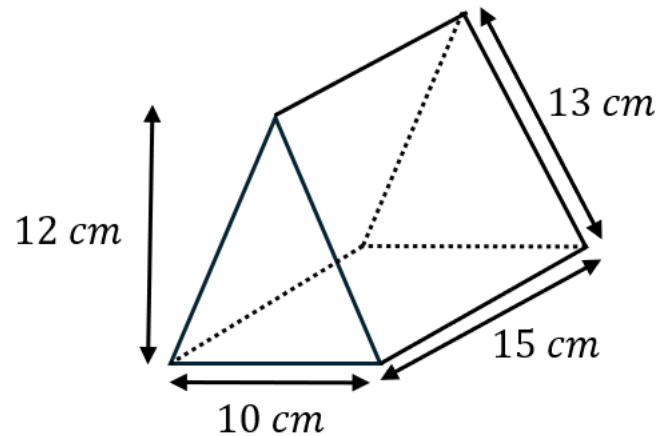
- 4) Given that the surface area of the cuboid shown in the diagram is  $248\text{ mm}^2$ , work out the value of  $x$ .



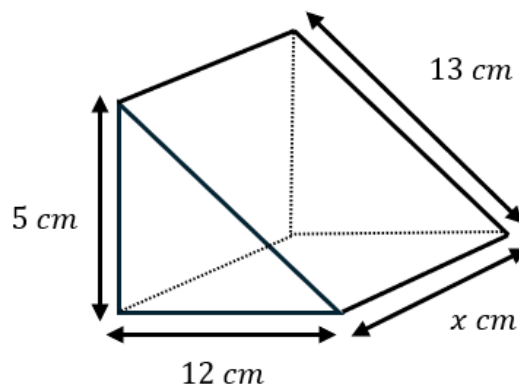
- 5) The cross section of the prism shown below is a right-angled triangle. Work out the total surface area of the triangular prism.



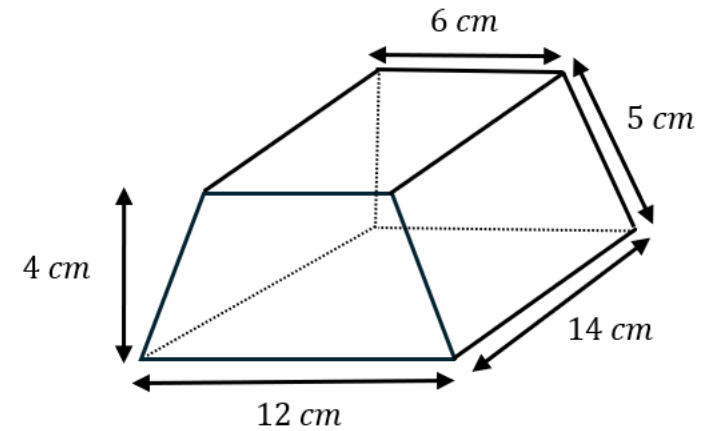
- 6) The dimensions of a triangular prism are as shown in the diagram. Work out the total surface area of the triangular prism.



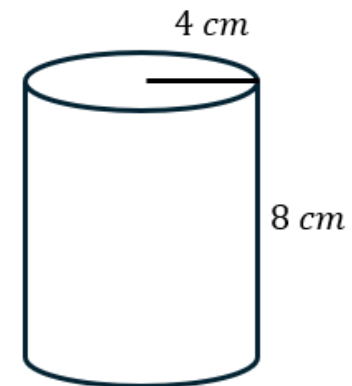
- 7) The cross section of the triangular prism is a right-angled triangle. Given that the total surface area of the prism is  $120 \text{ cm}^2$ , work out the value of  $x$ .



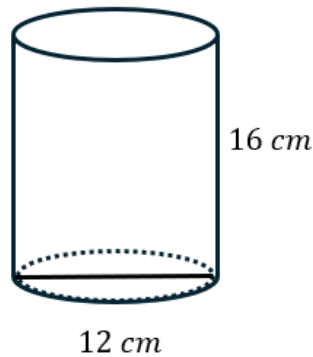
- 8) The cross section of the prism shown below is a trapezium. Work out the total surface area of the prism.



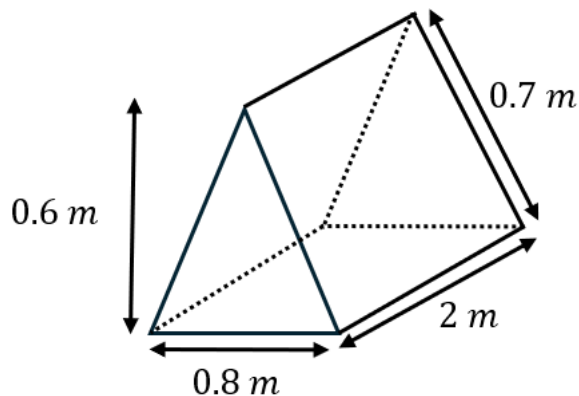
- 9) The cylinder shown below has a radius of 4 cm and a height of 8 cm. Work out the total surface area of the cylinder. Give your answer to 2 decimal places.



- 10) The cylinder shown below has a diameter of 12 cm and a height of 16 cm. Work out the total surface area of the cylinder. Give your answer in terms of  $\pi$ .

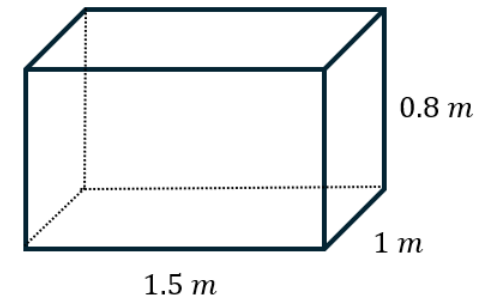


- 11) A carpenter is building a wooden storage crate shaped like a triangular prism. The dimensions of the crate are shown below. The entire inside and outside surface of the crate will be painted.



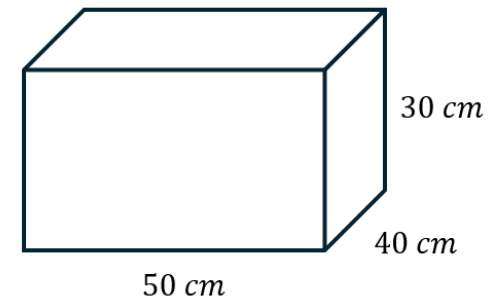
A tin of paint covers  $3 \text{ m}^2$  and costs £18 per tin.  
Work out the total cost of the paint.  
You must show all your working.

- 12) A company is wrapping a large gift box shaped like a cuboid for a shop display. The measurements of the box are shown in the diagram below.



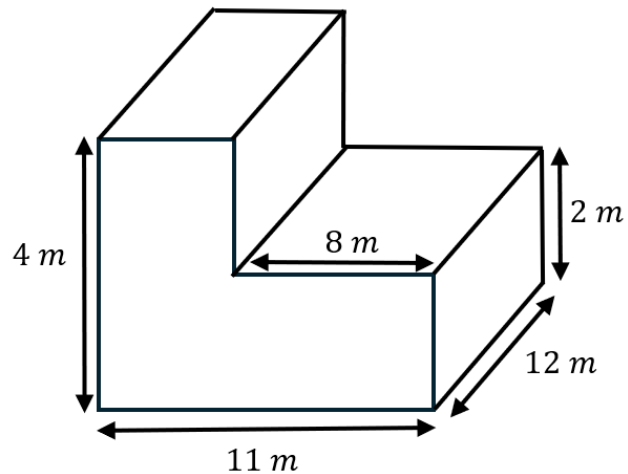
Wrapping paper costs £4 per square metre.  
Given that, 10% extra paper is needed for overlaps and mistakes,  
work out the total cost of the wrapping paper.

- 13) Six small storage containers are going to be painted. The dimensions of the containers are shown in the diagram below.



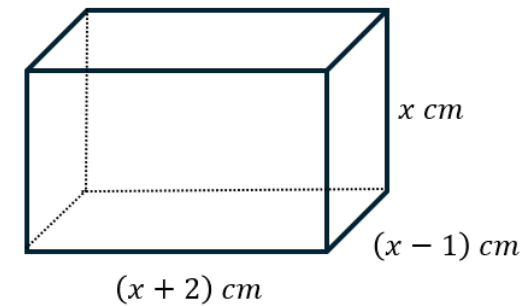
One tin of paint can cover  $0.5 \text{ m}^2$ .  
Given that each container will be given two coats of paint, work out  
the number of tins of paint needed. You must demonstrate all your  
working.

14) Work out the total surface area of the L-shaped prism shown below.



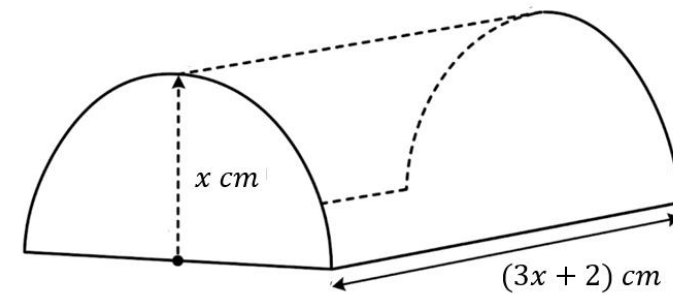
Challenge

15) The cuboid shown in the diagram has a length of  $(x + 2)$  cm, a width of  $(x - 1)$  cm and a height of  $x$  cm.



Given that the surface area of the cuboid is  $214 \text{ cm}^2$ , show that  $3x^2 + 2x - 109 = 0$ .

16) A solid tunnel-shaped block is made from a half cylinder placed on top of a rectangular base. The half cylinder has a radius of  $x$  cm and length  $(3x + 2)$  cm.



Show that the total surface area of the solid can be written in the form  $a\pi x^2 + b\pi x + cx^2 + dx$ , where  $a, b, c$  and  $d$  are constants to be found.