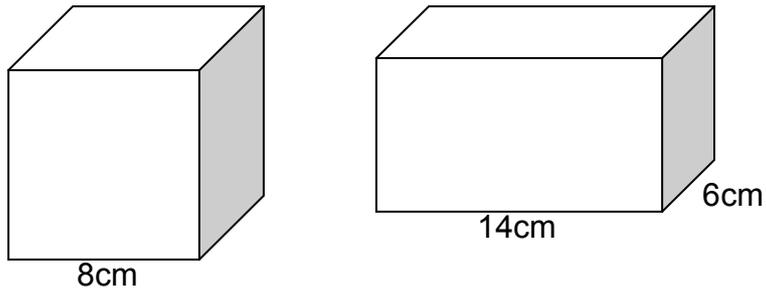


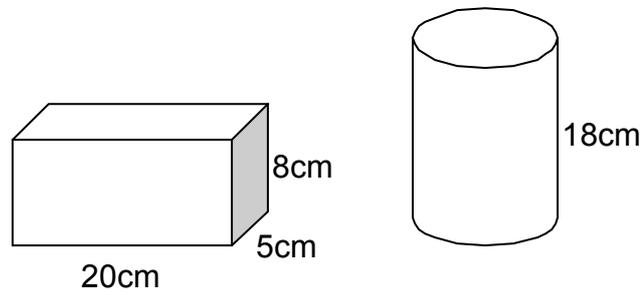
Volume 2

1. The cube and the cuboid below have the same volume.



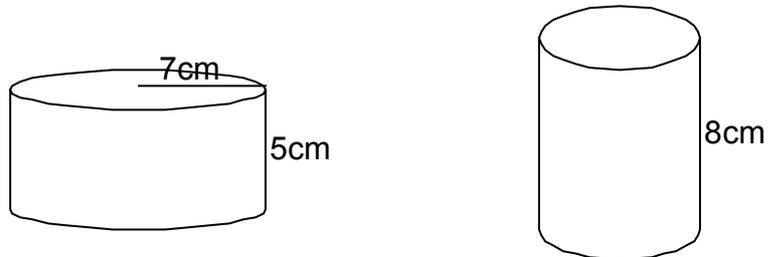
Calculate the height of the cuboid.

2. The cuboid and the cylinder below have the same volume.



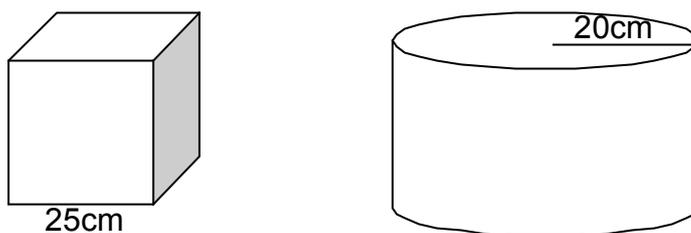
Calculate the radius of the cylinder.

3. The two cylinders below have the same volume.



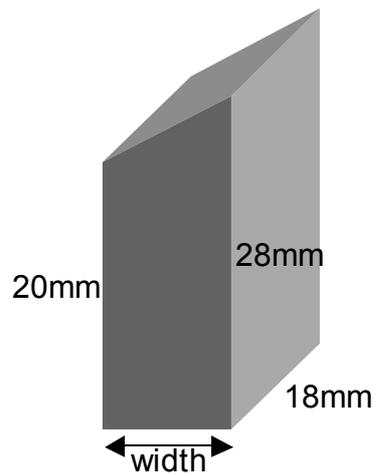
Calculate the radius of the second cylinder.

4. In the diagram below the volume of the cylinder is **double** that of the cube.



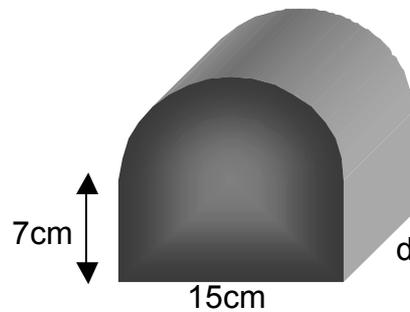
Calculate the height of the cylinder.

5. The cross-section of the prism below is made from a rectangle and a triangle.



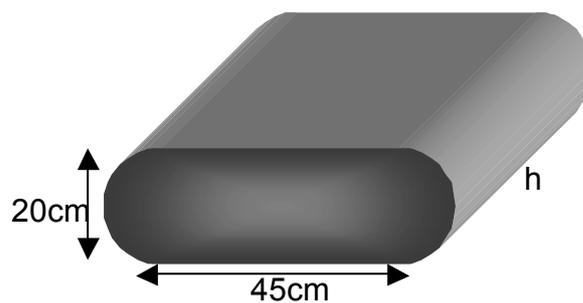
Given the volume of the prism is 5184 mm^3 , calculate its width.

6. The cross-section of the prism below is a rectangle and a semi-circle.



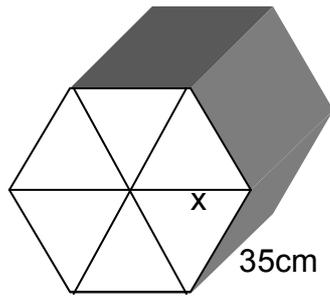
Given the volume of this prism is 1740 cm^3 , calculate d correct to the nearest whole number.

7. The cross-section of the prism below consists of a rectangle and a circle.



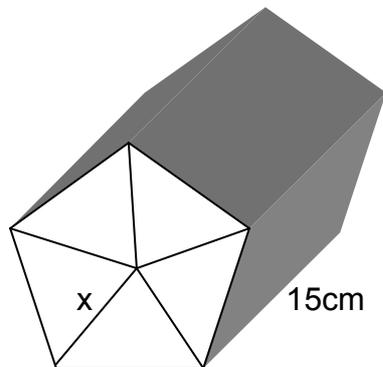
If the volume of this prism is $60\,700 \text{ cm}^3$, calculate h .

8. The diagram below shows a prism whose cross-section is a regular hexagon.

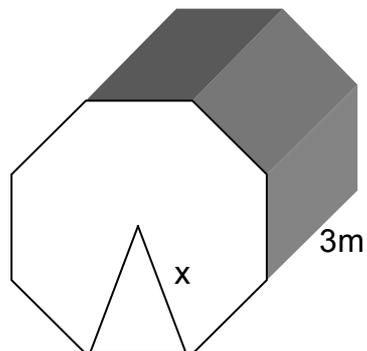


The volume of this prism is $20\,500\text{cm}^3$ and its depth is 35 cm . Calculate the length x .

9. The diagram below shows a prism with cross-section in the form of a regular pentagon of volume 2850 cm^3 . Calculate x .

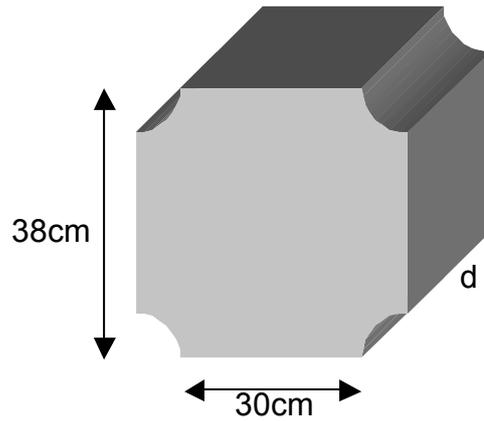


10. The diagram below shows a prism whose cross-section is in the form of a regular octagon.



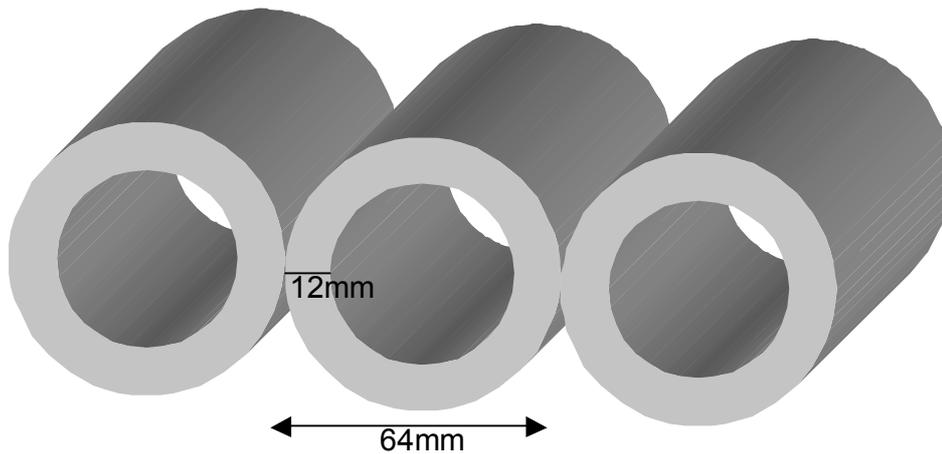
Given the volume of this prism is 8.3 m^3 , calculate x .

11. A concrete block has a cross-section in the shape of a square with a quarter circle removed from each corner, as shown.



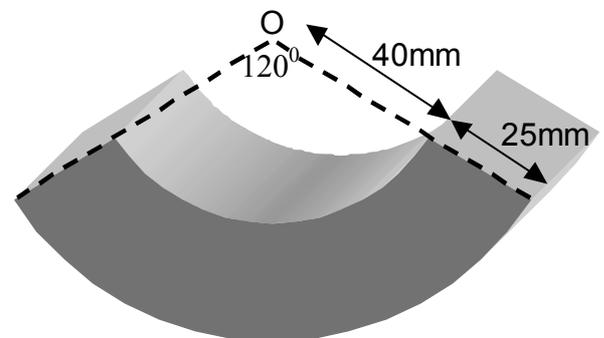
If the volume of this prism is $27\,875\text{ cm}^3$, calculate the depth, d , of the block.

12. The diagram below shows 3 metal pipes with a total volume of $480\,000\text{ mm}^3$. Each pipe is identical with a circular cross-section.



Calculate the length of each pipe.

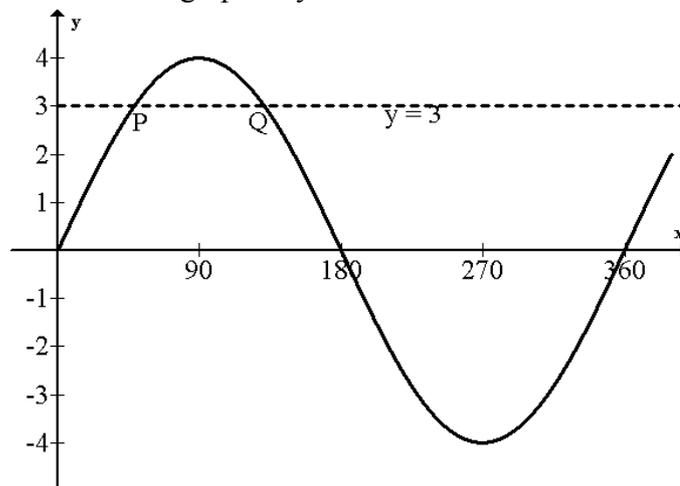
13. A piece of metal is in the shape of prism whose cross-section is made from 2 sectors of circles with radii as shown. The volume of the metal is $82\,425\text{ mm}^3$.



Calculate the depth of this piece of metal.

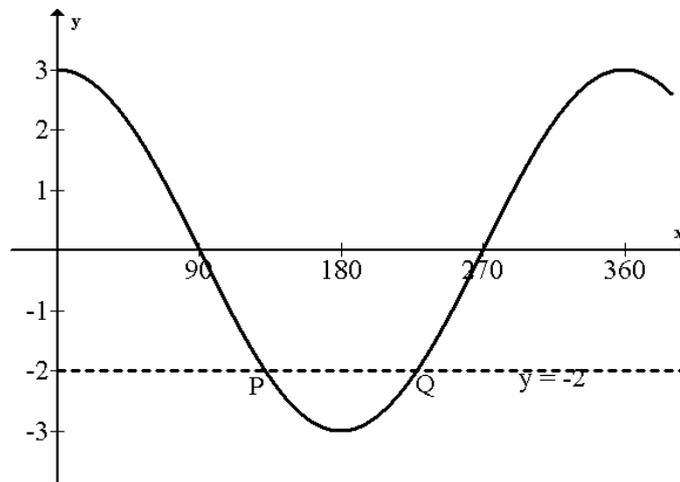
14. A triangle ABC has area 65 cm^2 . Given $AB = 11 \text{ cm}$ and $AC = 14 \text{ cm}$, calculate the possible sizes of angle BAC.
15. A triangle PQR has area 300 cm^2 . Given $PQ = 30 \text{ cm}$ and $PR = 21 \text{ cm}$, calculate the possible sizes of angle QPR.
16. Triangle ABC has an area of 14 square centimetres. $AB = 6 \text{ centimetres}$ and $AC = 7 \text{ centimetres}$. Calculate the possible sizes of angle BAC.
17. Triangle KLM has an area of 75 cm^2 . $KL = 12 \text{ cm}$ and $LM = 14 \text{ cm}$, calculate angle KLM given it is acute.
18. Triangle UVW has area 265 mm^2 . $UV = 20 \text{ mm}$ and $UW = 30 \text{ mm}$, calculate angle VUW given it is obtuse.

19. The diagram shows the graph of $y = 4 \sin x$.



The line $y = 3$ has been drawn on the graph. Find the coordinates of P and Q.

20. The graph of $y = 3 \cos x$ is shown below.



The line $y = -2$ has been drawn on the graph. Find the coordinates of P and Q.