

GCSE Exam Questions on Area and Perimeter

Question 1. (AQA June 2003 Intermediate Paper 2 Calculator OK)

A circular pond has a radius of 2.2 m.

(a) Calculate the circumference of the pond.

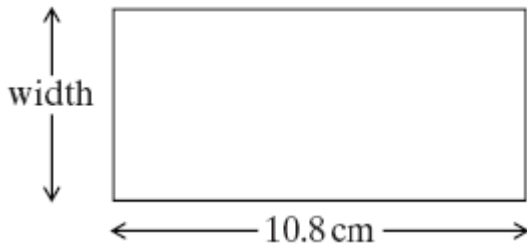
[2 marks]

(b) Calculate the area of the pond.

[3 marks]

Question 2. (AQA June 2004 Intermediate Paper 2 Calculator OK)

The length of a rectangle is 10.8 cm.
The perimeter of the rectangle is 28.8 cm.



Calculate the width of this rectangle.

[3 marks]

Question 3. (AQA June 2004 Intermediate Paper 2 Calculator OK)

A circular dish has a diameter of 9 cm.

Calculate the circumference of the dish

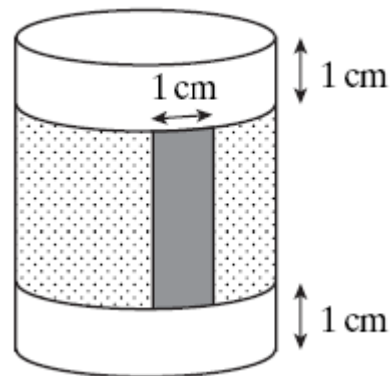
[2 marks]

Question 4. (AQA June 2004 Intermediate Paper 2 Calculator OK)

A tin of diameter 7 cm and height 12 cm has a label around it.

The label is glued together using a 1 cm overlap.

There is a 1 cm gap between the label and the top and bottom of the tin.



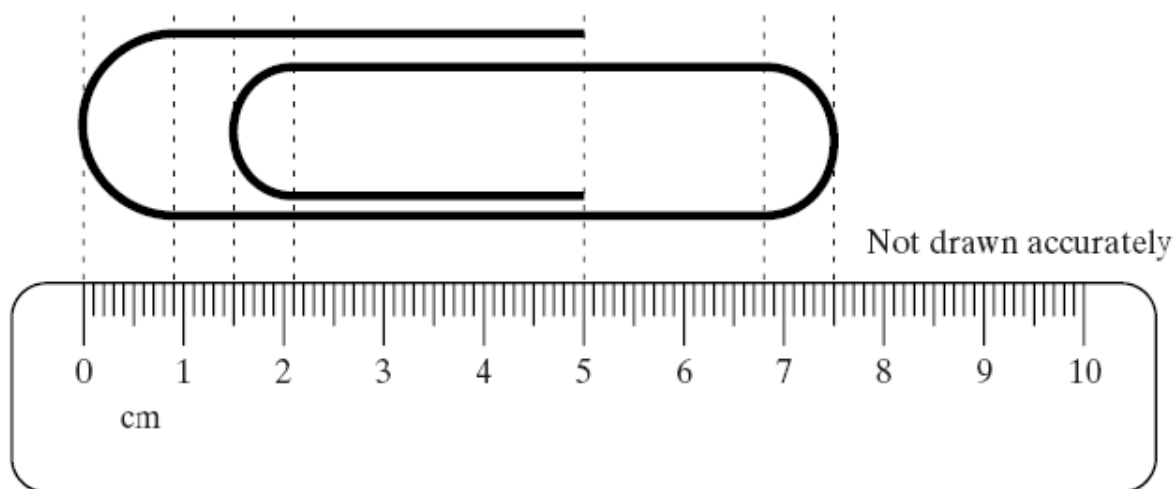
Find the length and height of the label.

[4 marks]

GCSE Exam Questions on Area and Perimeter

Question 5. (AQA June 2005 Intermediate Paper 2 Calculator OK)

A giant paperclip is placed alongside a centimetre ruler.
The curved ends are semicircles.

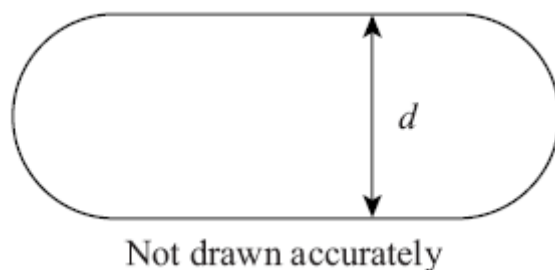


Calculate the length of wire used to make the clip.
Give your answer in centimetres.

[5 marks]

Question 6. (AQA June 2006 Intermediate Paper 2 Calculator OK)

A race track is made from two straights and two semicircles.
The straights are 80 m long.
The race track has a total perimeter of 400 m.



Calculate the distance, d , between the two straights.

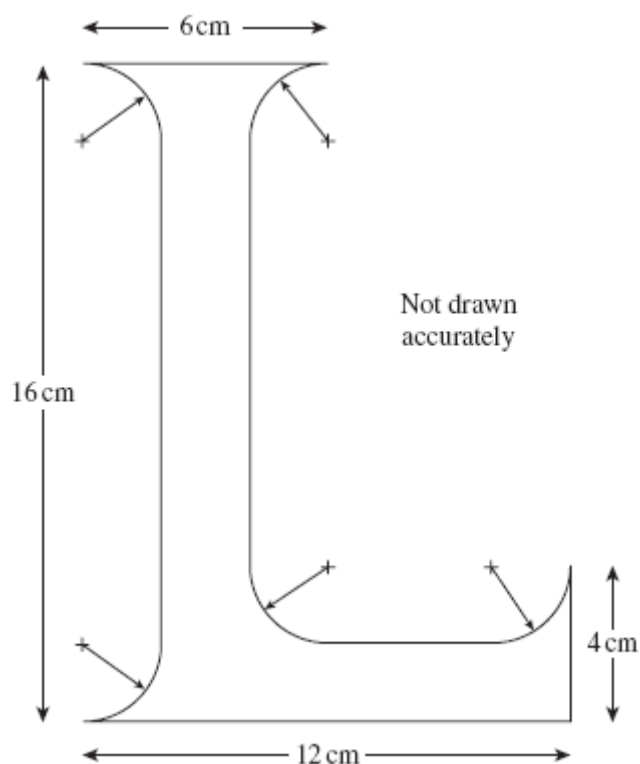
[4 marks]

A sign maker designs a letter L.

All arcs are quarter circles of radius 2 cm.

Calculate the area of the letter L.

[4 marks]

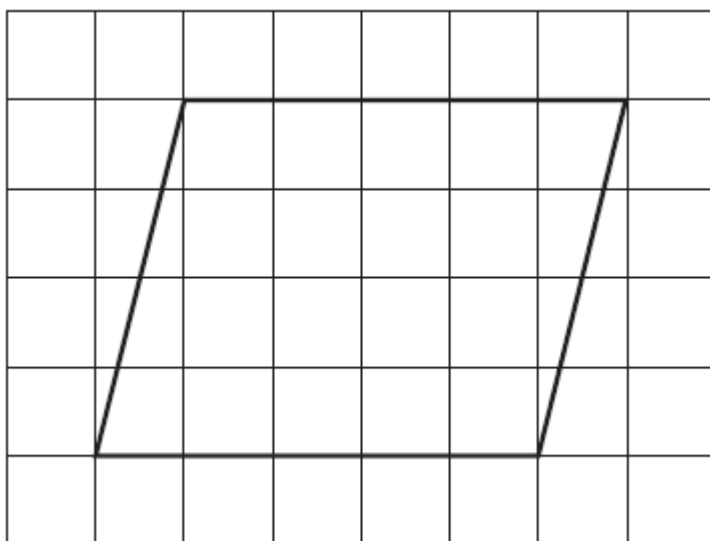


Question 9. (AQA June 2003 Intermediate Paper 1 NO Calculator)

A parallelogram is drawn on a centimetre square grid.

Calculate the area of the parallelogram.

[2 marks]



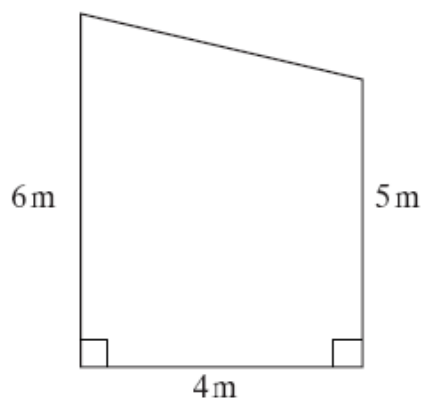
Question 11. (AQA June 2005 Intermediate Paper 1 NO Calculator)

The diagram shows the side wall of a building.

Calculate the area of the wall.

You **must** show all your working.

[2 marks]

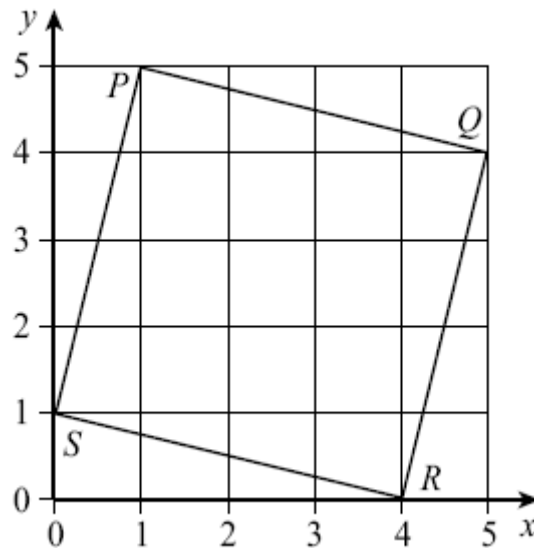


GCSE Exam Questions on Area and Perimeter

Question 12. (AQA June 2006 Intermediate Paper 1 NO Calculator)

The square PQRS is drawn on a centimetre square grid.

Calculate the area of square PQRS.
You **must** show your working.
State the units of your answer.

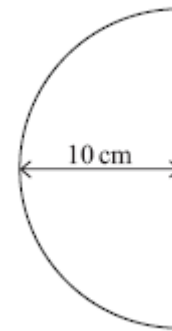


[4 marks]

Question 13. (AQA June 2006 Intermediate Paper 1 NO Calculator)

The diagram shows a semi-circle of radius 10 cm.

Show that the perimeter of the semi-circle is $10(\pi + 2)$ cm.

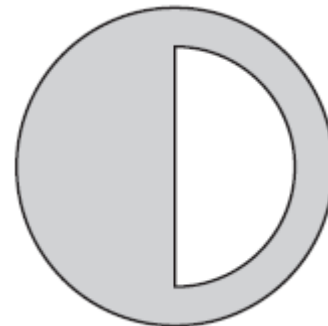


[4 marks]

Question 14. (AQA June 2007 Intermediate Paper 1 NO Calculator)

A semi-circle is cut from a circle.
The circle has a diameter of 30 cm.
The semi-circle has a diameter of 20 cm.

Calculate the shaded area. Give your answer in terms of π .



[3 marks]

Question 15. (AQA November 2005 Intermediate Paper 1 NO Calculator)

A cuboid is made from centimetre cubes.
The area of the base of the cuboid is 5 cm^2 .
The volume of the cuboid is 10 cm^3 .

Work out the surface area of the cuboid.

[3 marks]

GCSE Exam Questions on Area and Perimeter

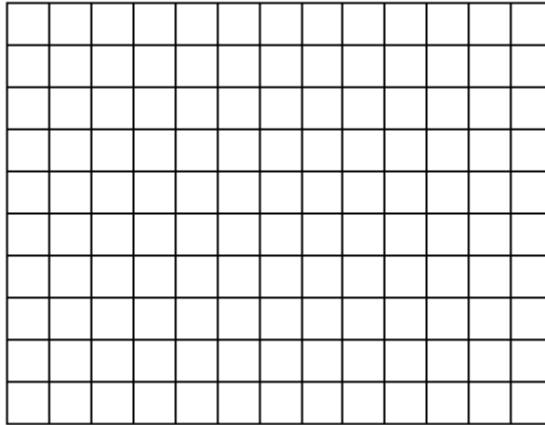
Question 16. (AQA November 2003 Intermediate Paper 1 NO Calculator)

A rectangle has an area of 40 cm^2 and a perimeter of 26 cm.

Find the length and width of the rectangle.

You may use the grid to help you.

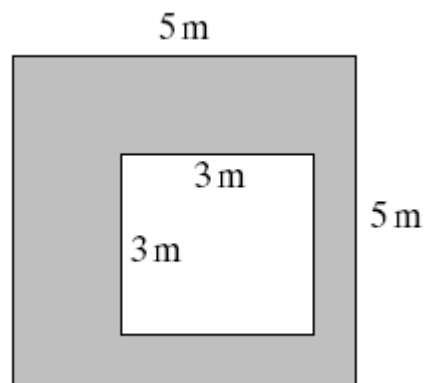
[2 marks]



Question 17. (AQA November 2003 Intermediate Paper 1 NO Calculator)

What percentage of this shape is shaded?

[4 marks]



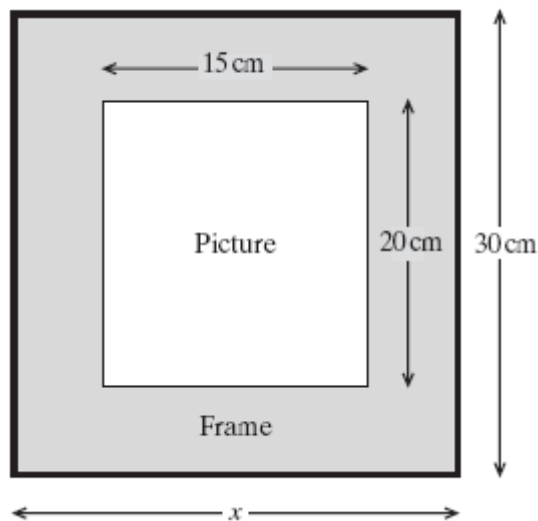
Question 18. (AQA November 2005 Intermediate Paper 1 NO Calculator)

The diagram shows a rectangular picture with a frame around it.

The frame is the same width all the way round.

The picture is 15cm wide and 20cm high.

The total height of the picture **and** frame is 30cm.



(a) Work out the width, x , shown on the diagram.

[3 marks]

(b) Work out the area of the frame. State the units of your answer.

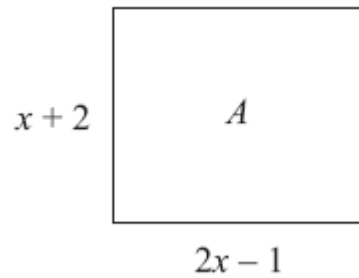
[4 marks]

GCSE Exam Questions on Area and Perimeter

Question 19. (AQA November 2006 Intermediate Paper 1 NO Calculator)

Rectangle A has length $(2x - 1)$ cm and width $(x + 2)$ cm.

(a) Show that the perimeter of rectangle A is $(6x + 2)$ cm.

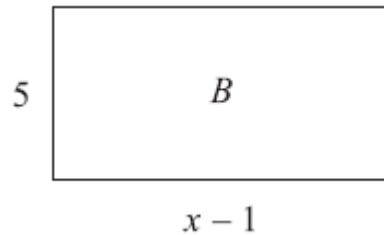


[1 mark]

(b) Rectangle B has length $(x - 1)$ cm and width 5cm.

The perimeter of rectangle A is equal to the perimeter of rectangle B.

Write down and solve an equation in x .



[4 marks]

(c) Find the area of rectangle A.

[2 marks]

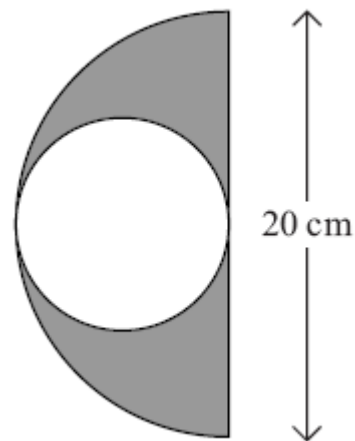
Question 20. (AQA November 2006 Intermediate Paper 1 NO Calculator)

A circle fits exactly inside a semi-circle of diameter 20cm.

The shaded area is $a \times \pi$ square centimetres.

Work out the value of a .

You **must** show your working.

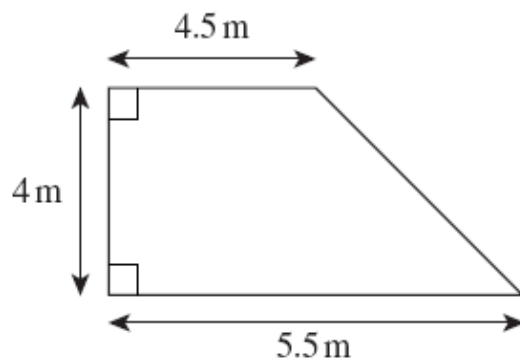


[4 marks]

Question 21. (AQA November 2007 Intermediate Paper 1 NO Calculator)

The diagram shows a trapezium.

Work out the area of the trapezium.



[2 marks]

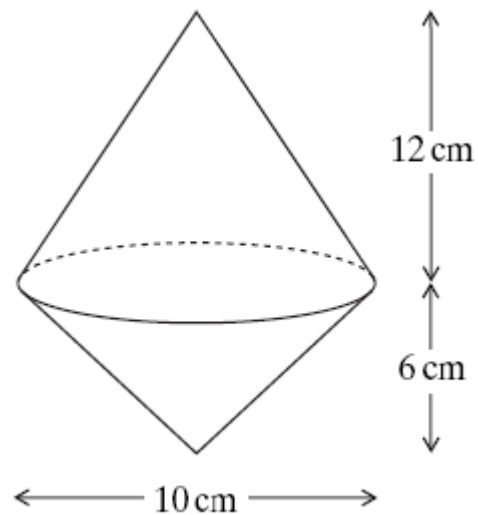
Question 22. (AQA June 2004 Higher Paper 2 Calculator OK)

GCSE Exam Questions on Area and Perimeter

The diagram shows a float made from two cones with dimensions as shown.

Calculate the total surface area of the float.

[5 marks]

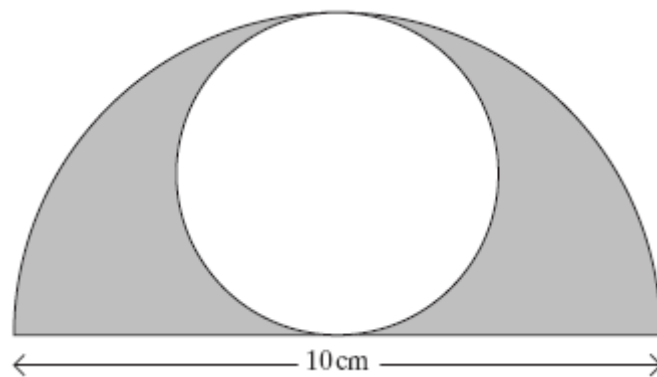


Question 23. (AQA June 2005 Higher Paper 2 Calculator OK)

A circle fits inside a semi-circle of diameter 10cm as shown.

Calculate the shaded area.

[3 marks]

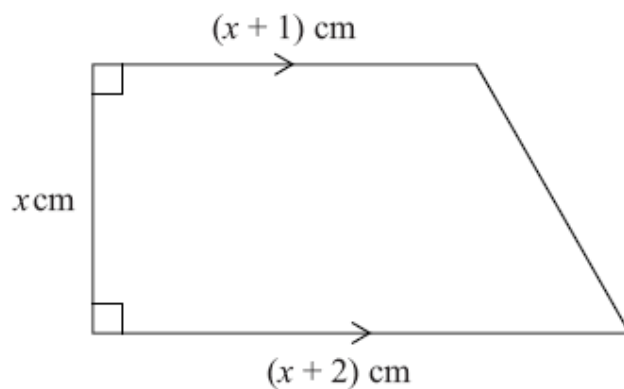


Question 24. (AQA June 2006 Higher Paper 2 Calculator OK)

A trapezium has parallel sides of length $(x + 1)$ cm and $(x + 2)$ cm.

The perpendicular distance between the parallel sides is x cm.

The area of the trapezium is 10 cm^2 .



Find the value of x

[5 marks]

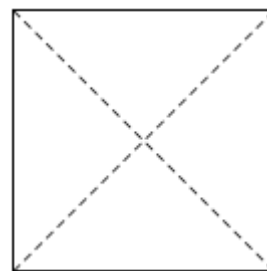
GCSE Exam Questions on Area and Perimeter

Question 24. (AQA June 2007 Higher Paper 2 Calculator OK)

A square has diagonals of length 15cm.

Calculate the area of the square.

[3 marks]

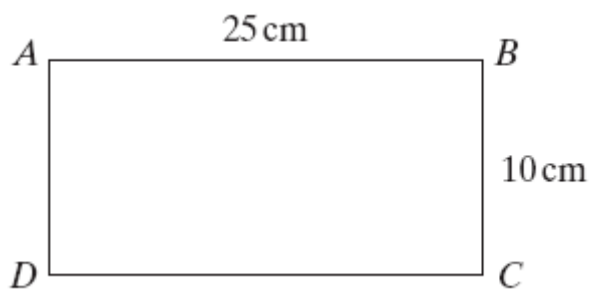


Question 25. (AQA November 2003 Higher Paper 2 Calculator OK)

ABCD is a rectangle with length 25cm and width 10cm.

The length of the rectangle is increased by 10%

The width of the rectangle is increased by 20%



Find the percentage increase in the area of the rectangle.

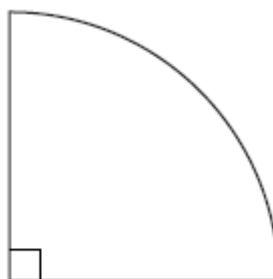
[3 marks]

Question 26. (AQA November 2005 Higher Paper 2 Calculator OK)

A square of side x and a quarter-circle of radius r have the same area.



x



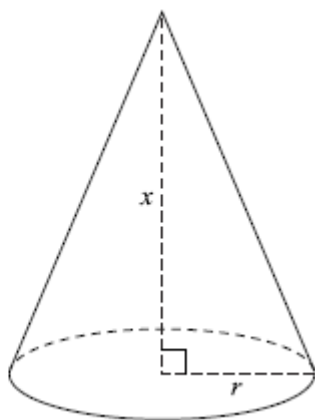
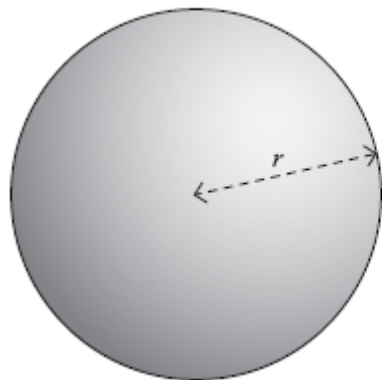
r

Express r in terms of x . Simplify your answer.

[3 marks]

A sphere has radius r . A cone has base radius r and perpendicular height x .

The volume of the sphere is double the volume of the cone.



(a) Show that $x = 2r$

[2 marks]

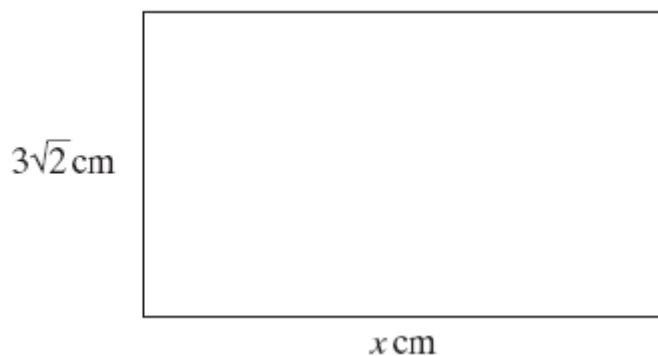
(b) Calculate the ratio of the surface area of the sphere to the curved surface area of the cone.

Give your answer in surd form.

[4 marks]

Question 28. (AQA November 2004 Higher Paper 2 Calculator OK)

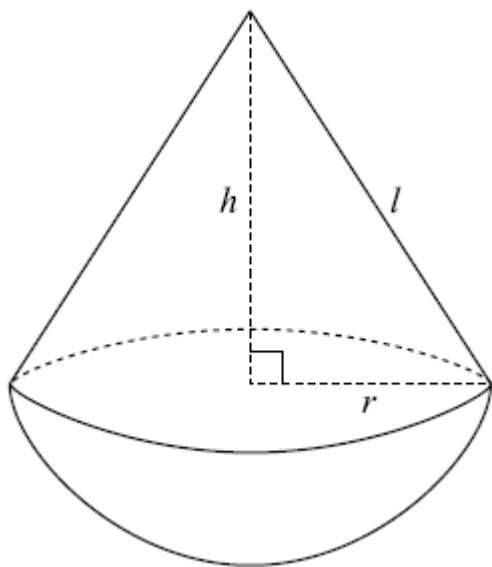
The area of this rectangle is 30 cm^2 .



Find the value of x , writing your answer in the form $a\sqrt{b}$ where a and b are integers.

[3 marks]

The diagram shows a solid made from a cone and hemisphere.
The radius of both shapes is r . The slant height of the cone is l .
The perpendicular height of the cone is h .



The curved surface area of the cone and the curved surface area of the hemisphere are equal.

(a) Show that $l = 2r$

[2 marks]

(b) Find the perpendicular height, h , of the cone in terms of r .

[2 marks]

(c) Find the ratio of the volumes of the cone and the hemisphere.
Give your answer in surd form.

[2 marks]