

Name:

Exam Style Questions

Area of a semicircle

Area of a quarter circle



Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

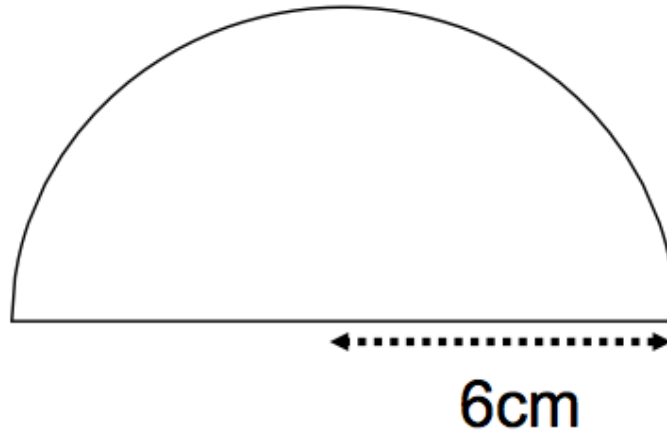
Videos 47, 47a



Answers and Video Solutions



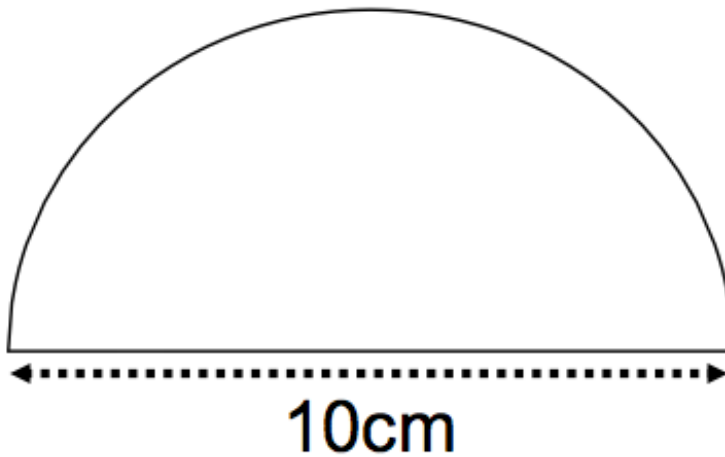
1. Shown is a semi-circle.



Work out the area.
State the units for your answer.

.....
(3)

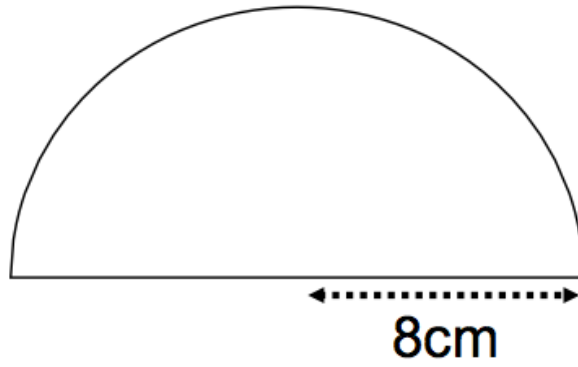
2. Shown is a semi-circle.



Work out the area.
Give your answer to 1 decimal place.

.....cm²
(3)

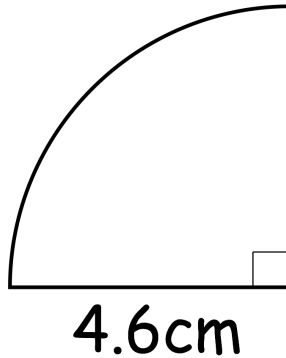
3. Below is a semi-circle.



Work out the area of the semi-circle.
Leave your answer in terms of π

.....cm²
(3)

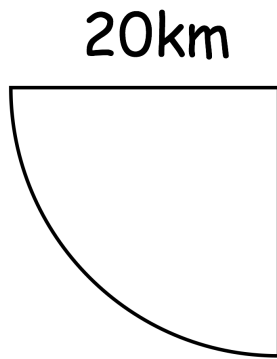
4. Shown below is a quarter-circle with a radius of 4.6cm



Work out the area.
Give your answer to 1 decimal place.

.....cm²
(3)

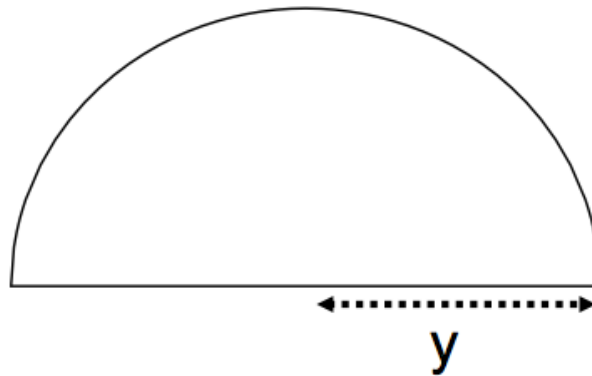
5. Shown below is a quarter-circle with radius 20km.



Work out the area of the quarter-circle.
Leave your answer in terms of π

.....km²
(3)

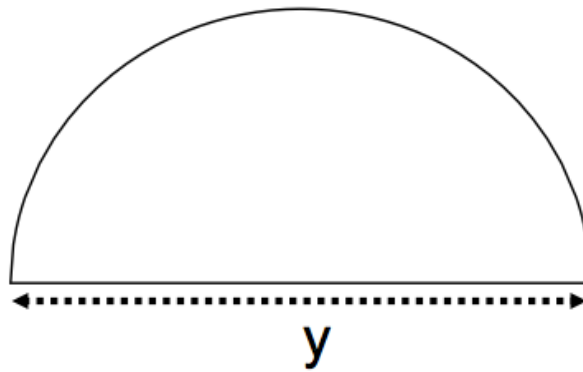
6. The semi-circle below has an area of 40cm²



Calculate y.

.....cm
(3)

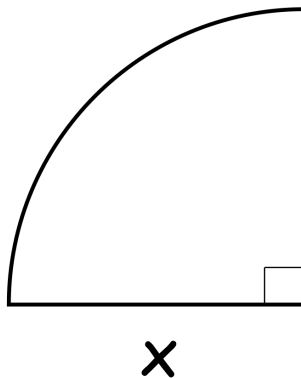
7. The semi-circle below has an area of $50\pi \text{ cm}^2$



Calculate y .

.....cm
(3)

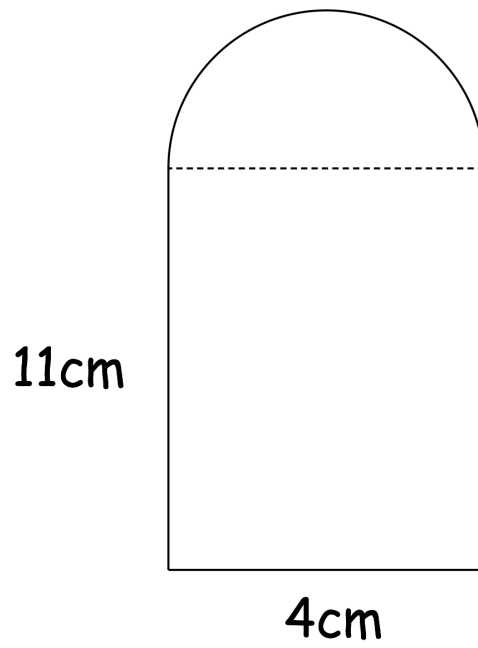
8. The quarter circle below has an area of 10.75 cm^2



Calculate x .

.....cm
(3)

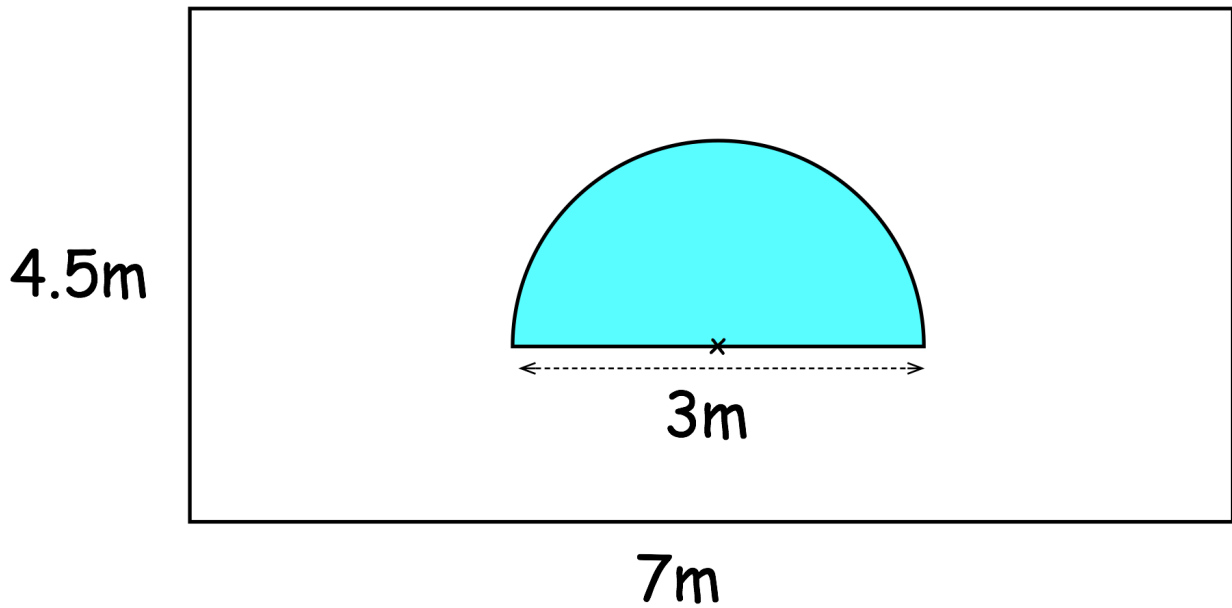
9. Shown below is a compound shape made from a rectangle and semi-circle.



Calculate the area of the shape.

.....cm²
(3)

10. The side of a wooden shed is shown below.
The wall is 7 metres long and 4.5 metres tall.
There is a semi-circular glass window, 3m wide.



James wants to paint the shed wall.
Each tin costs £7.99 and covers 4m²

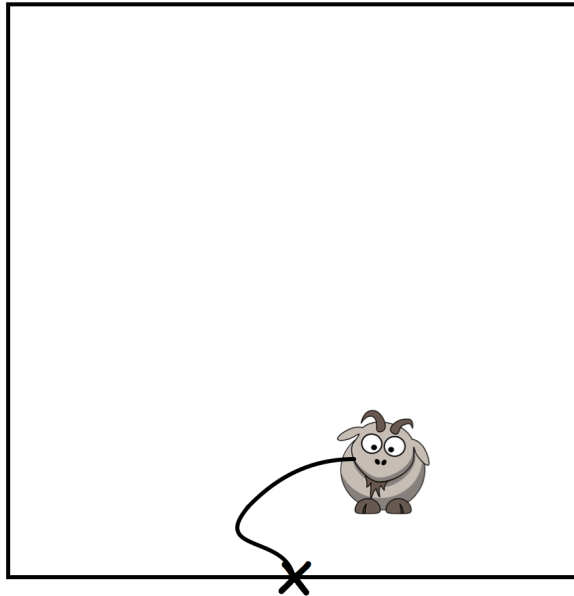
Work out the total cost to paint the shed wall.

£.....
(5)

11. A goat is in a square field which has length 12m.
The goat is tied to the middle of a 12m fence on one side with a 5m rope.



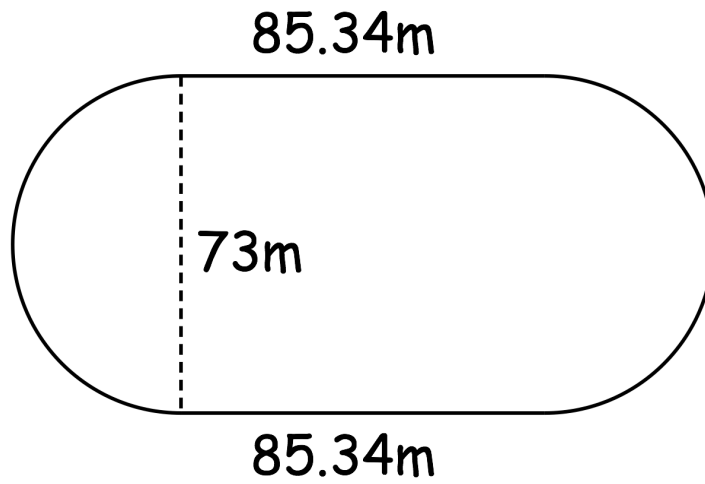
12m



Work out the percentage of the field the goat can reach.

.....%
(5)

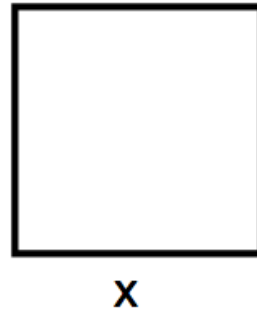
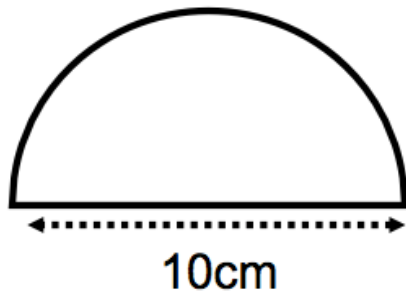
12. Shown below is a running track at a local leisure centre.



Calculate the area inside the running track.

.....m²
(4)

13.

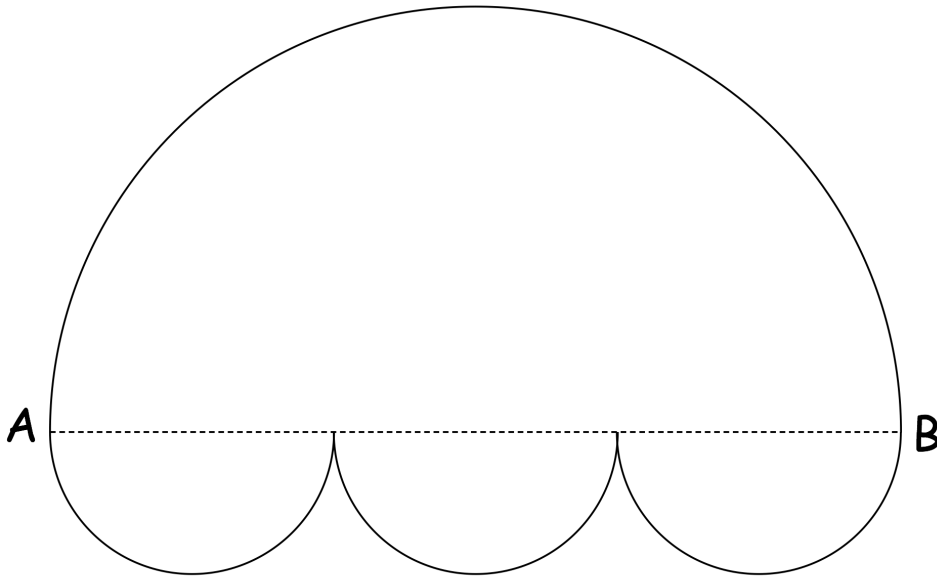


The semi-circle and square have the same area.

Calculate the side length of the square.

.....cm
(4)

14. A shape is made from one large semicircle and three small congruent semicircle.



$AB = 24\text{cm}$

Work out the area of the shape.

..... cm^2
(4)

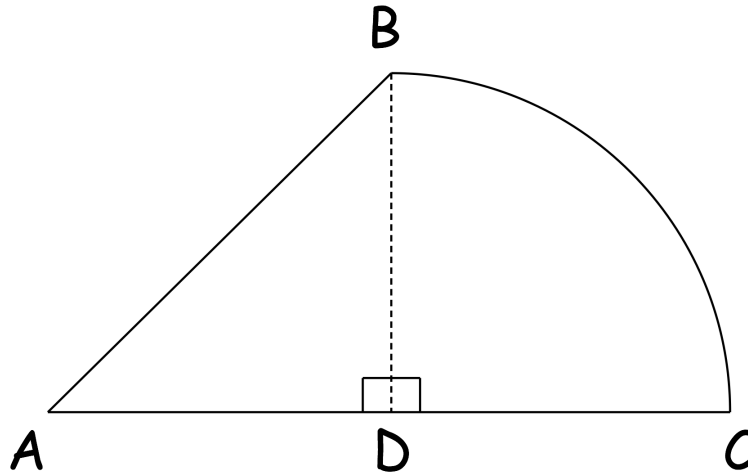
15. Farmer Kennedy is planting a crop in her field.



The field, ABCD, consists of a triangle and a quarter-circle.

D is the midpoint of AC.

DC = 30m



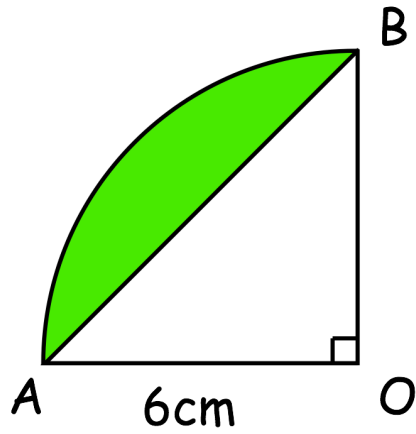
The seed costs £1.50 per square metre.

When fully grown, Farmer Kennedy can sell the crop from 4m^2 for £50

Calculate the profit she should make.

£.....
(6)

16. Below is a quarter-circle with centre O and radius 6cm



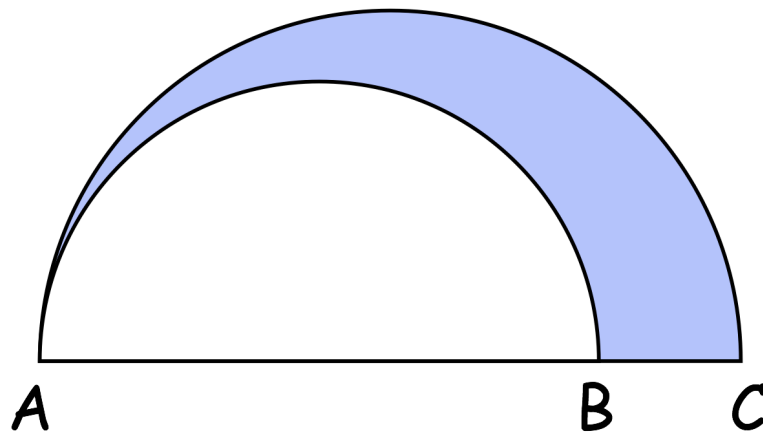
(a) Find the area of quarter-circle OAB.

.....cm²
(3)

(b) Find the area of the shaded segment.

.....cm²
(3)

17. Nihal designs a logo.
He has drawn two semicircles, one with base AC and another with base AB.



B is a point on the line AC such that $AB : AC = 4 : 5$

$BC = 3\text{cm}$.

Find the area of the shaded region.

.....cm²
(5)