Name:

Exam Style Questions

Circumference of a Circle
Perimeter of a Semicircle

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

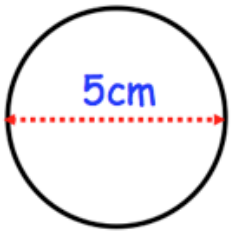
Revision for this topic

www.corbettmaths.com/contents

Video 60

Video 243

1. Shown below is a circle with diameter 5cm.



Calculate the circumference of the circle.
Give your answer to 1 decimal place.

$\pi \times 5 = 15.7079...$

15.7 .....cm
(2)

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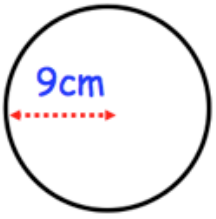
2. Shown below is a circle with radius 9cm.

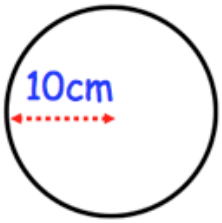


Work out the circumference of the circle.
Give your answer to 1 decimal place.

$\pi \times 18 = 56.5486...$

56.5 .....cm
(2)

3. Shown below is a circle with radius 10cm.

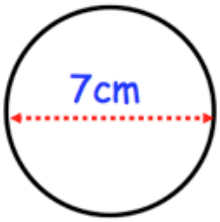


Work out the circumference of the circle.
Give your answer in terms of π.

$\pi \times 20 = 20\pi$

.....20π.....cm
(2)

4. Shown below is a circle with diameter 7cm.



Work out the circumference of the circle.
Give your answer in terms of π.

$\pi \times 7 = 7\pi$

.....7π.....cm
(2)

5. A circular mirror has a diameter of 1.3m.

Work out the circumference of the mirror.

$\pi \times 1.3 = 4.084\ldots$

4.084 .....m

(2)

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6. A tin of baked beans has diameter 7.5cm.

What is the circumference of circle with diameter 7.5cm?

$\pi \times 7.5 = 23.5619\ldots$

23.56 .....cm

(2)

7. Use $\pi = 3.14$ to work out the circumference of a circle of diameter 4cm.

3.14 x 4

12.56 .....cm

(2)

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8. A circular plate has circumference of 37.7cm
Calculate the diameter of the plate.

37.7 ÷ π = 12.000282...

12 .....cm

(2)

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9. A circular pond has radius of 6m.
Calculate the circumference of the pond.

Give your answer in terms of π.

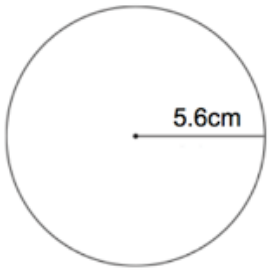
6 x 2 = 12

π x 12 = 12π

12π .....m

(2)

10. A circle has radius 5.6cm.



(a) Work out the circumference of the circle.

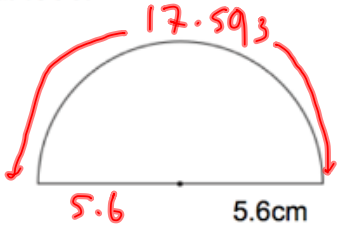
$5.6 \times 2 = 11.2$

$\pi \times 11.2 = 35.185...$

35.186 .....cm

(2)

A semicircle has radius 5.6cm



(b) Work out the perimeter of the semicircle.

$35.185... \div 2 = 17.5929...$

$17.593 + 5.6 + 5.6 = 28.793$

28.793 .....cm

(2)

11. The circumference of a circle measures 19.5cm.

Work out the length of the diameter of the circle.

$19.5 \div \pi = 6.207...$

6.207 .....cm

(2)

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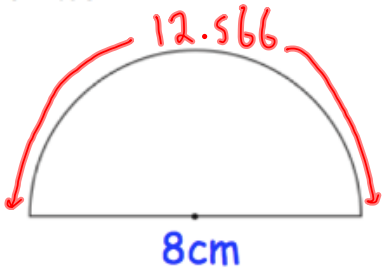
12. A semicircle is shown below.



Work out the perimeter of the semicircle.

$\pi \times 8 = 25.13274123$

$25.13274123 \div 2 = 12.56637061$

$12.566 + 8 = 20.5663...$

20.566 .....cm

(3)

13. The circumference of a circle measures 4m.

Work out the length of the radius of the circle.

$400 \div \pi = 127.3239545$

$127.3239545 \div 2 = 63.661977\ldots$

63.662

.....cm

(2)

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14. Georgina has 1 metre of pink ribbon.
She wants to wrap it around a tree trunk with diameter 32 centimetres.

Will she be able to wrap the ribbon around the tree trunk?
Explain your answer.

$\pi \times 32 = 100.5309\ldots$

100cm.

No, there is not enough ribbon.

.....

.....

.....

(2)

15. James has a bicycle.
Each wheel has diameter 45cm.

James cycles his bicycle in a straight line in the playground.
The front wheel makes 15 complete revolutions.

How far does the bicycle travel?
Give your answer in metres.

$\pi \times 45 = 141.3716694$ cm

$141.37\ldots \times 15 = 2120.575\ldots$ cm

$2120.575\ldots \div 100 = 21.2058$m

21.2058 ..... m
(4)

16. A circular wheel has a diameter of 30cm.
The wheel rolls a distance of 60m.

Calculate the number of complete revolutions completed.

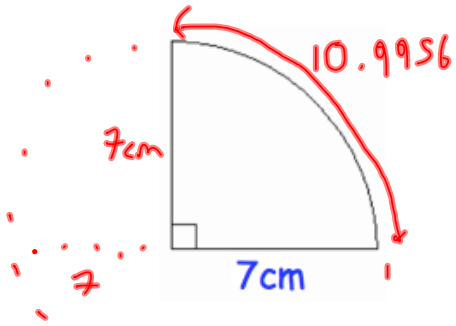
$\pi \times 30 = 94.2477...$

$6000 \div 94.2477... = 63.6619...$ revolutions

63

(4)

17.



Work out the perimeter of a quarter-circle with radius 7cm.

$\pi \times 14 = 43.9822...$

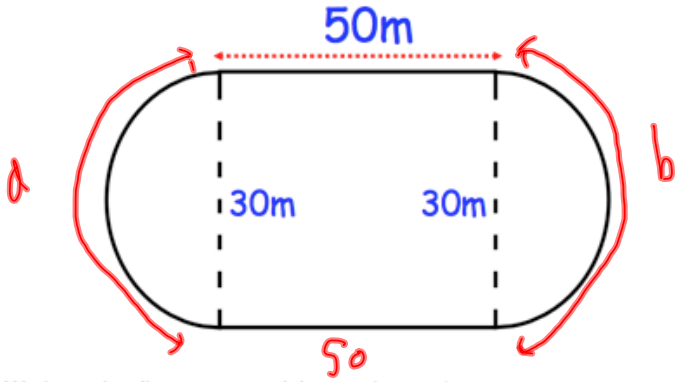
$43.9822... \div 4 = 10.995...$

$10.9956 + 7 + 7 = 24.9956$

24.9956 cm

(3)

18. A primary school has a running track.
It has two straights of 50 metres.
Also there are two 'bends' that are semicircles with diameter 30 metres.



Work out the distance around the running track.

a & b make a complete circle.

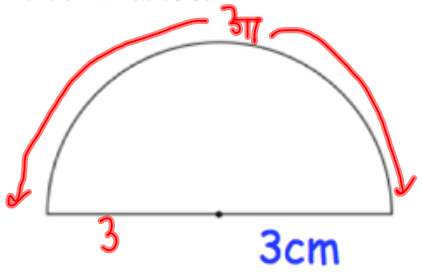
$\pi \times 30 = 94.247...$ m

$94.2478 + 50 + 50 = 194.2478$ m.

194.25 .....m

(5)

19. Shown is a semicircle with radius 3cm.



Work out the perimeter of the semicircle.
Give your answer in terms of π.

$\pi \times 6 = 6\pi$

$6\pi \div 2 = 3\pi$

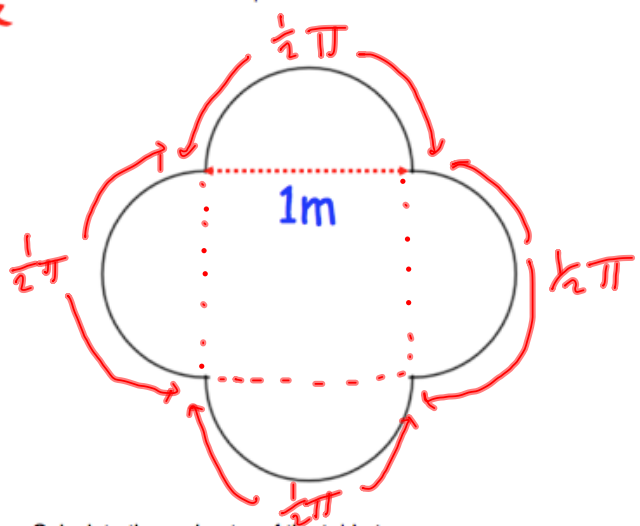
$3\pi + 3 + 3$

$= 3\pi + 6$

$3\pi + 6$ .....cm

(4)

20. Shown is a table top.
It is made from a 1m square and four semicircles.



Calculate the perimeter of the table top.

$\pi \times 1 = \pi$

$\pi \div 2 = \frac{1}{2}\pi$

$\frac{1}{2}\pi + \frac{1}{2}\pi + \frac{1}{2}\pi + \frac{1}{2}\pi$

2π .....m

(4)