

GCSE Maths: Area of a circle, semicircles and composite shapes (Foundation): worksheet

GCSE Maths - Perimeter, Area and Circles - Foundation - Lesson 18.7

Name: _____

Date: _____

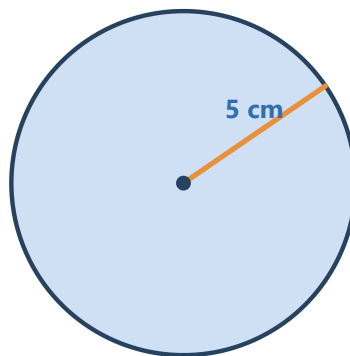
Score: _____

21 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch18-perimeter-area-circles/foundation/area-of-a-circle-semicircles-and-composite-shapes/

Exercise 18G Area of a circle, semicircles and composite shapes

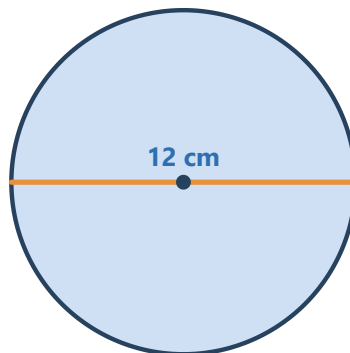
Calculator allowed

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



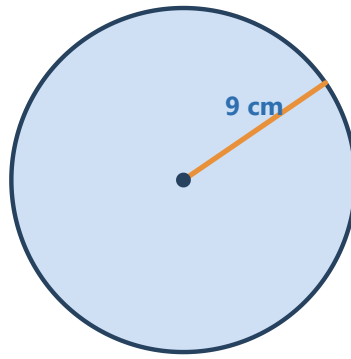
Answer:

- 2 Work out the area of the circle. Give your answer to 1 decimal place.



Answer:

- 3 Work out the area of the circle with radius 9 cm. Give your answer (a) in terms of π and (b) to 1 decimal place.



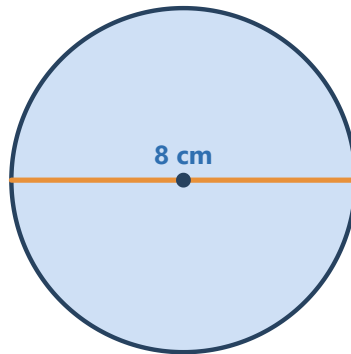
(a) in terms of π

Answer:

(b) 1 d.p.

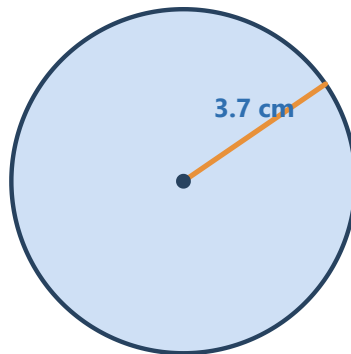
Answer:

- 4 Work out the area of a circle with diameter 8 cm. Give your answer in terms of π .



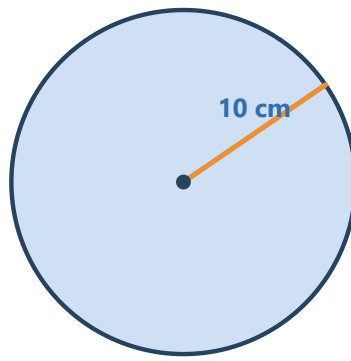
Answer:

- 5 Work out the area of the circle. Give your answer to 3 significant figures.



Answer:

- 6 Estimate the area of the circle by using $\pi \approx 3$. Then use your calculator to find the area to 1 decimal place.



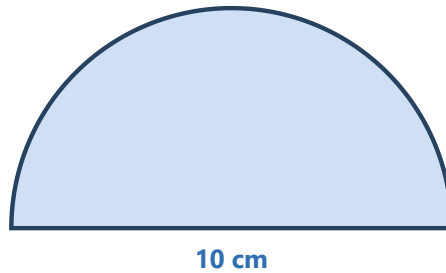
(a) estimate

Answer:

(b) calculator

Answer:

7 Work out (a) the area and (b) the perimeter of the semicircle. Give your answers to 1 decimal place.



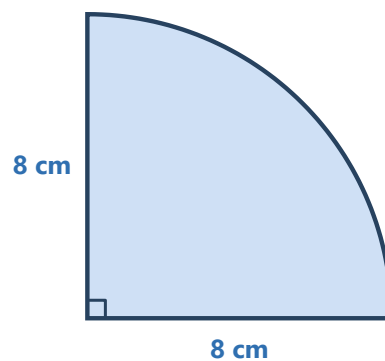
(a) area

Answer:

(b) perimeter

Answer:

8 The shape is a quarter of a circle. Work out (a) its area and (b) its perimeter. Give both answers in terms of π .



(a) area

Answer:

(b) perimeter

Answer:

- 9 The diagram shows a window made from a rectangle and a semicircle. Work out (a) the area and (b) the perimeter. Give your answers to 1 decimal place.



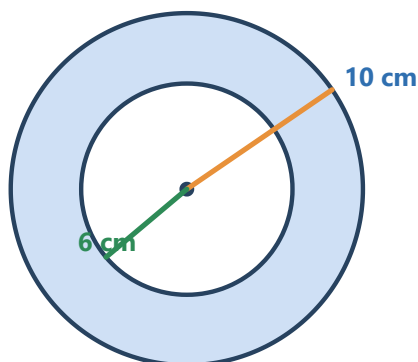
(a) area

Answer:

(b) perimeter

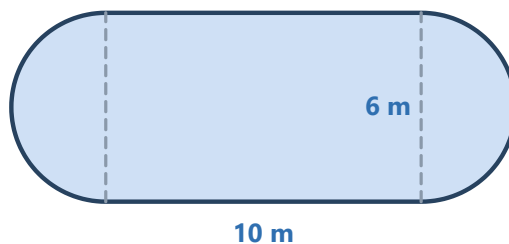
Answer:

- 10 The diagram shows a ring. Work out the shaded area. Give your answer in terms of π .



Answer:

- 11 A running track is a rectangle with a semicircle at each end, as shown. Work out (a) the distance round the track and (b) the area inside the track. Give your answers in terms of π .



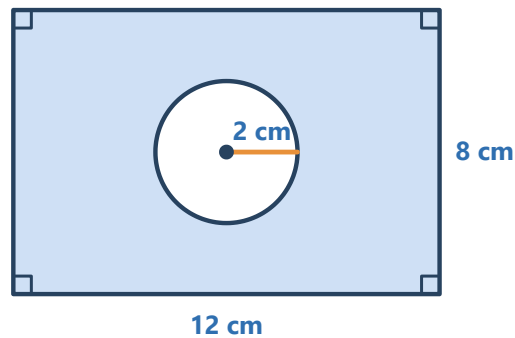
(a) perimeter

Answer:

(b) area

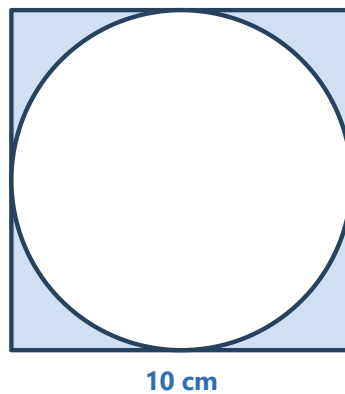
Answer:

- 12** A metal plate is a rectangle 12 cm by 8 cm with a circular hole of radius 2 cm cut out. Work out the area of the plate. Give your answer to 1 decimal place.



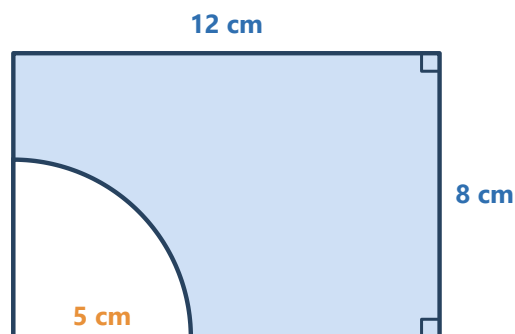
Answer:

- 13** A circle just touches all four sides of a square of side 10 cm. Work out the shaded area. Give your answer to 1 decimal place.



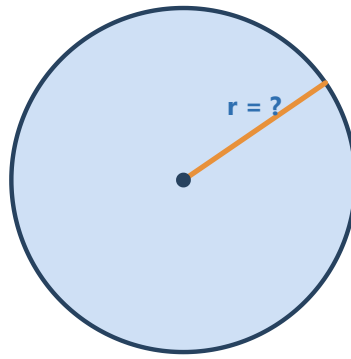
Answer:

- 14** A quarter circle of radius 5 cm is cut from a 12 cm by 8 cm rectangle. Work out the shaded area to 3 significant figures.



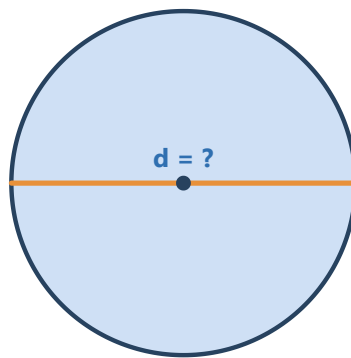
Answer:

- 15** The area of a circle is $64\pi \text{ cm}^2$. Work out the radius.



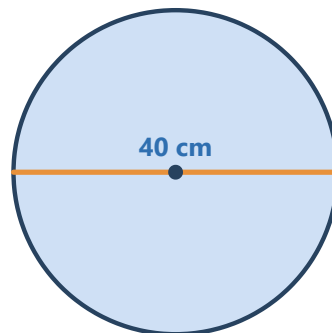
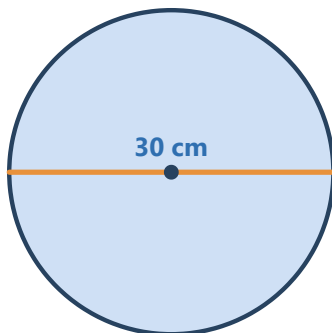
Answer:

- 16** The area of a circle is 100 cm^2 . Work out the diameter. Give your answer to 1 decimal place.



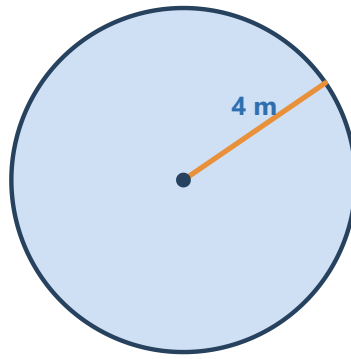
Answer:

- 17** A pizza shop sells a medium pizza (diameter 30 cm) for £8 and a large pizza (diameter 40 cm) for £12. Which is better value for money? Show your working.



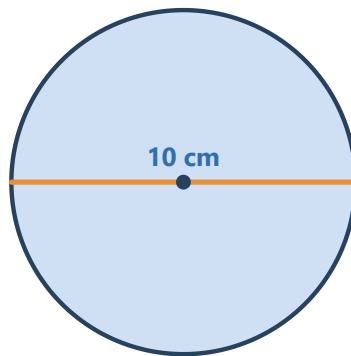
Answer:

- 18** A circular lawn has radius 4 m. Turf costs £3.50 per square metre and must be bought in whole square metres. Work out the cost of the turf.



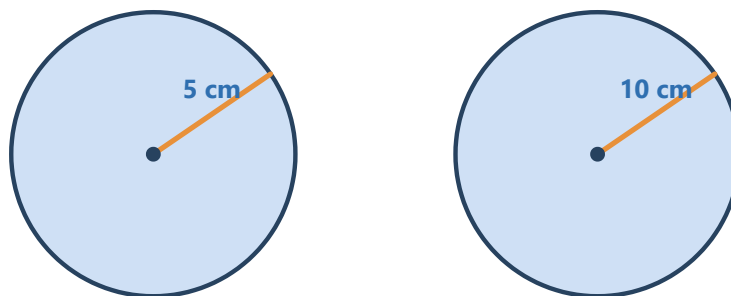
Answer:

- 19** Kai says: "The area of a circle with diameter 10 cm is $\pi \times 10^2 = 314 \text{ cm}^2$." Explain his mistake and work out the correct area to 1 decimal place.



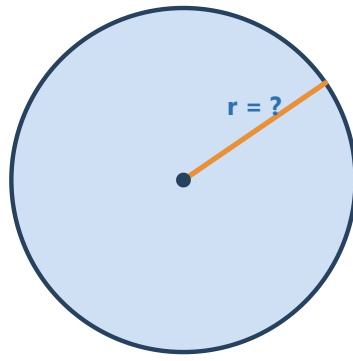
Answer:

- 20** Show that the area of a circle with radius 10 cm is 4 times the area of a circle with radius 5 cm.



Answer:

- 21** A circle has the same value for its area (in cm^2) as for its circumference (in cm). Work out its radius.



Answer:

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