



ACHIEVE ACADEMY

GCSE Maths — Higher Tier

Area & Perimeter (including Circles) · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☐ Secure

☒ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Area & Perimeter (including Circles)

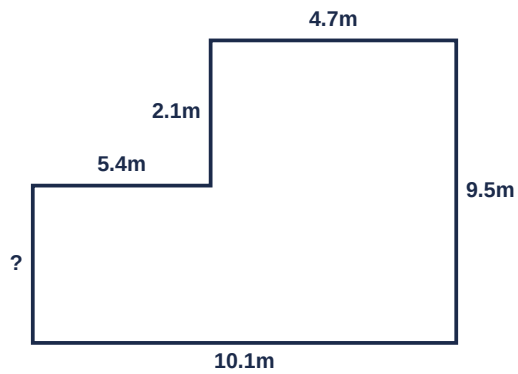
Total marks available: 104

● Area & Perimeter (including Circles)

Q1

[4 marks]

The L-shaped figure below has the dimensions shown. Calculate its perimeter, to 3 significant figures.

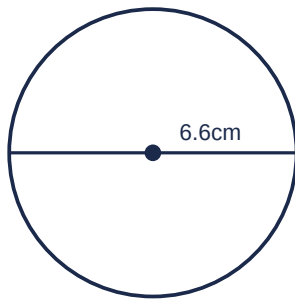


A large dashed rectangular box for the student's answer.

Q2

[3 marks]

The circle below has a diameter of 6.6cm. Calculate its circumference, to 3 significant figures.

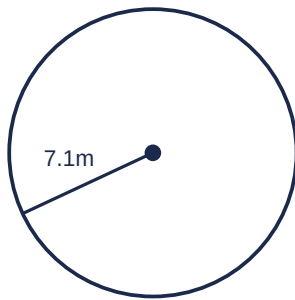


A large rectangular area with a dashed border, intended for the student to show their working out.

Q3

[3 marks]

The circle below has a radius of 7.1m. Calculate its area, to 3 significant figures.

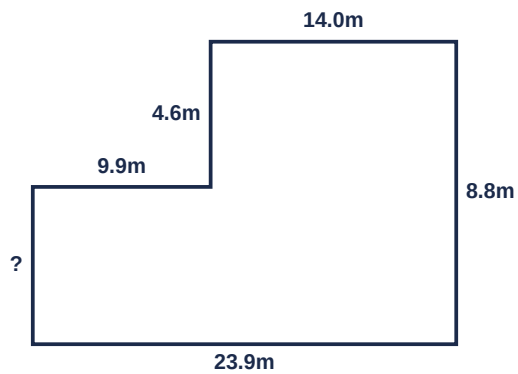


A large dashed rectangular box for writing the answer.

Q4

[4 marks]

The L-shaped figure below has the dimensions shown. Calculate its perimeter, to 3 significant figures.

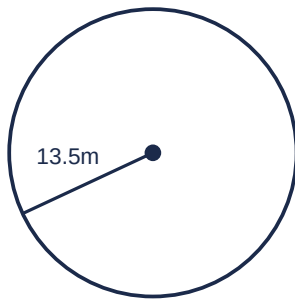


A large dashed rectangular box for the student's answer.

Q5

[3 marks]

The circle below has a radius of 13.5m. Calculate its area, to 3 significant figures.

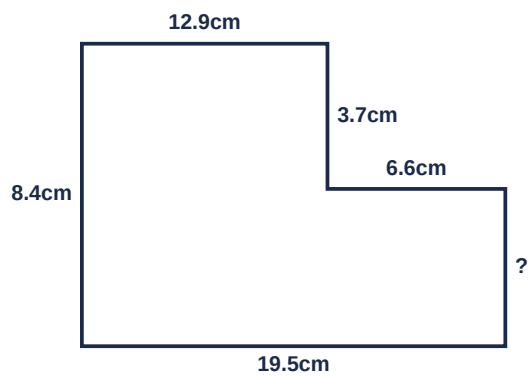


A large dashed rectangular box for writing the answer.

Q6

[4 marks]

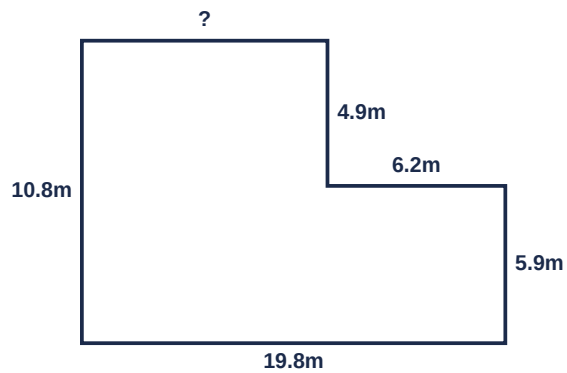
The L-shaped figure below has the dimensions shown. Calculate its perimeter, to 3 significant figures.



Q7

[4 marks]

The L-shaped figure below has the dimensions shown. Calculate its area, to 3 significant figures.

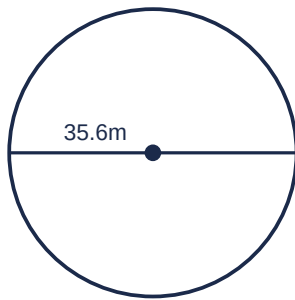


A large dashed rectangular box for the student's answer.

Q8

[3 marks]

The circle below has a diameter of 35.6m. Calculate its area, to 3 significant figures.

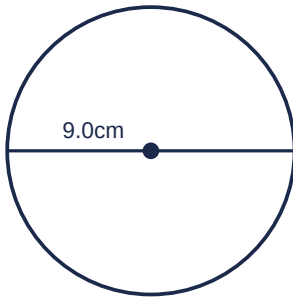


A large rectangular area with a dashed border, intended for the student to show their working out.

Q9

[3 marks]

The circle below has a diameter of 9.0cm. Calculate its area, to 3 significant figures.

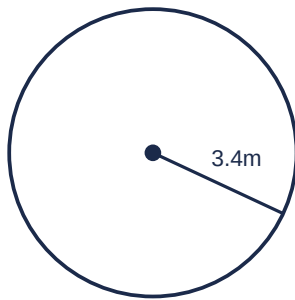


A large rectangular area with a dashed border, intended for the student to show their working out.

Q10

[3 marks]

The circle below has a radius of 3.4m. Calculate its area, to 3 significant figures.

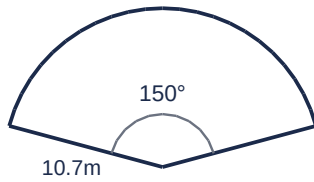


A large dashed rectangular box for writing the answer.

Q11

[3 marks]

The sector below has radius 10.7m and angle 150° . Calculate the length of the arc, to 3 significant figures.

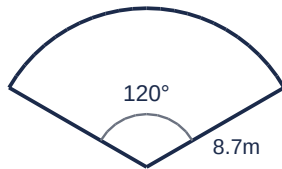


A large dashed rectangular box for the student's answer.

Q12

[3 marks]

The sector below has radius 8.7m and angle 120° . Calculate the length of the arc, to 3 significant figures.

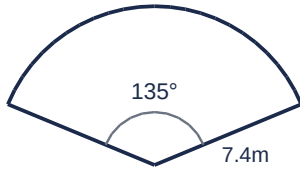


A large dashed rectangular box for the student's answer.

Q13

[3 marks]

The sector below has radius 7.4m and angle 135° . Calculate the length of the arc, to 3 significant figures.

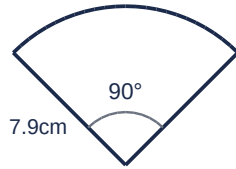


A large dashed rectangular box for the student to show their working.

Q14

[3 marks]

The sector below has radius 7.9cm and angle 90° . Calculate its area, to 3 significant figures.

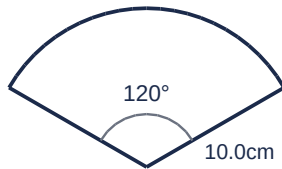


A large rectangular area with a dashed border, intended for the student to show their working.

Q15

[3 marks]

The sector below has radius 10.0cm and angle 120° . Calculate the length of the arc, to 3 significant figures.

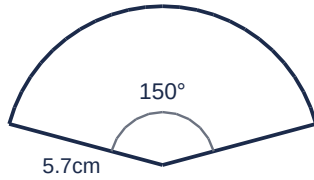


A large dashed rectangular box for the student to show their working.

Q16

[3 marks]

The sector below has radius 5.7cm and angle 150° . Calculate its area, to 3 significant figures.

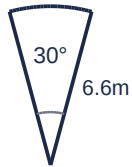


A large dashed rectangular box for the student's answer.

Q17

[3 marks]

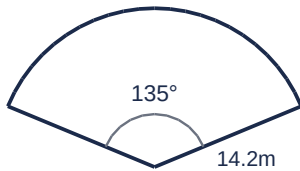
The sector below has radius 6.6m and angle 30° . Calculate the length of the arc, to 3 significant figures.



Q18

[3 marks]

The sector below has radius 14.2m and angle 135° . Calculate the length of the arc, to 3 significant figures.

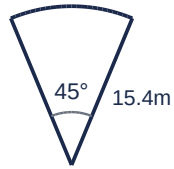


A large dashed rectangular box for the student to show their working.

Q19

[3 marks]

The sector below has radius 15.4m and angle 45° . Calculate its area, to 3 significant figures.

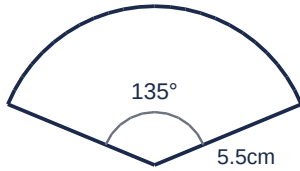


A large rectangular area with a dashed border, intended for the student to show their working out.

Q20

[3 marks]

The sector below has radius 5.5cm and angle 135° . Calculate its area, to 3 significant figures.

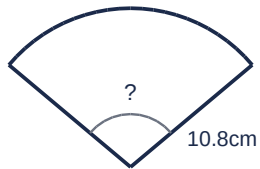


A large dashed rectangular box for the student's answer.

Q21

[4 marks]

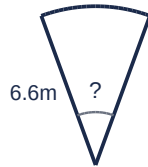
The sector below has radius 10.8cm and an area of 101.8cm^2 . Calculate the angle at the centre, marked with a question mark, to 1 decimal place.



Q22

[4 marks]

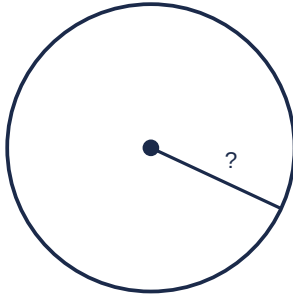
The sector below has radius 6.6m and an area of 15.2m^2 . Calculate the angle at the centre, marked with a question mark, to 1 decimal place.



Q23

[4 marks]

A circle has an area of 78.5cm^2 . Calculate its radius, marked with a question mark, to 3 significant figures.

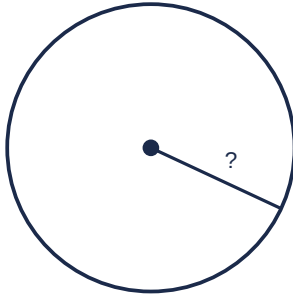


A large rectangular area with a dashed border, intended for the student to show their working out.

Q24

[4 marks]

A circle has an area of 28.3m^2 . Calculate its radius, marked with a question mark, to 3 significant figures.

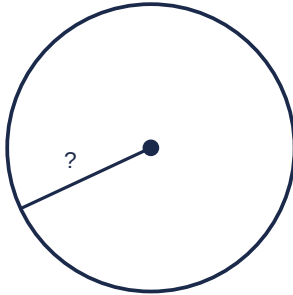


A large rectangular area with a dashed border, intended for the student to show their working out.

Q25

[4 marks]

A circle has an area of 307.9m^2 . Calculate its radius, marked with a question mark, to 3 significant figures.

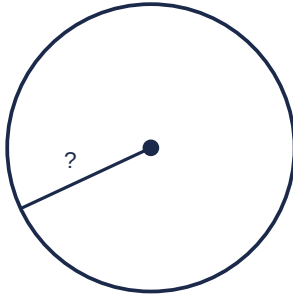


A large rectangular area with a dashed border, intended for the student to show their working or provide the final answer.

Q26

[4 marks]

A circle has an area of 295.6m^2 . Calculate its radius, marked with a question mark, to 3 significant figures.

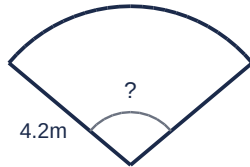


A large rectangular area with a dashed border, intended for the student to show their working out.

Q27

[4 marks]

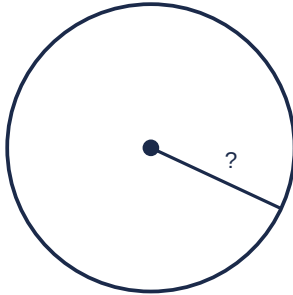
The sector below has radius 4.2m and an area of 15.4m^2 . Calculate the angle at the centre, marked with a question mark, to 1 decimal place.



Q28

[4 marks]

A circle has an area of 113.1cm^2 . Calculate its radius, marked with a question mark, to 3 significant figures.

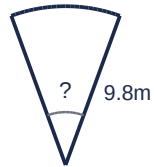


A large rectangular area with a dashed border, intended for the student to show their working or provide the final answer.

Q29

[4 marks]

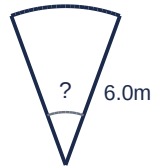
The sector below has radius 9.8m and an area of 33.5m^2 . Calculate the angle at the centre, marked with a question mark, to 1 decimal place.



Q30

[4 marks]

The sector below has radius 6.0m and an area of 12.6m^2 . Calculate the angle at the centre, marked with a question mark, to 1 decimal place.



A large dashed rectangular box for the student's answer.