Solutions by
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GCSE (9-1) Grade 4
Loci & Constructions



Instructions

Use **black** ink or ball-point pen.
Fill in the boxes at the top of this page with your name.
Answer **all** questions.
Answer the questions in the spaces provided
- there may be more space than you need.

Show all your working out

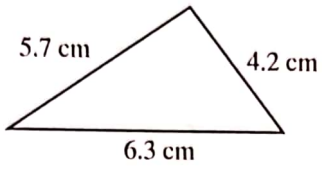
Information

The marks for **each** question are shown in brackets.
Use this as a guide as to how much time to spend on each question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed

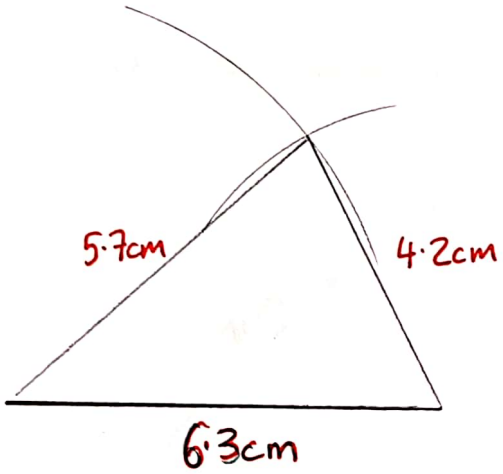
Advice

Read each question carefully before you start to answer it
Attempt every question
Check your answers if you have time at the end

1. Here is a sketch of a triangle.



In the space below, use ruler and compasses to **construct** this triangle accurately. You must show all construction lines.



(3 marks)

2.

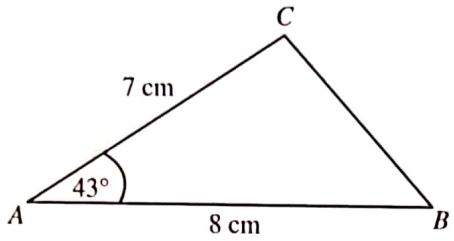
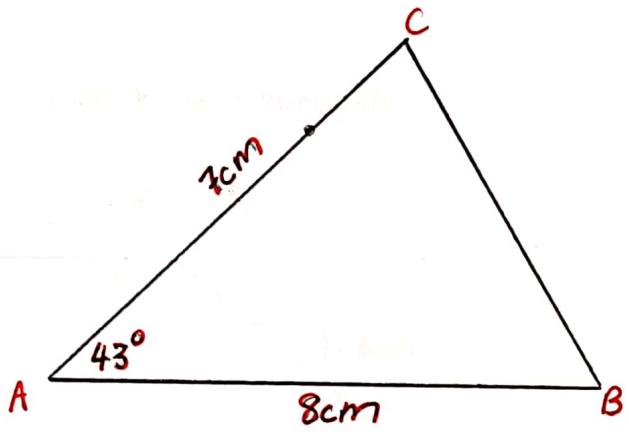


Diagram **NOT** accurately drawn

ABC is a triangle.
AB = 8 cm.
AC = 1 cm.
Angle *A* = 43°.

In the space below, make an accurate drawing of triangle *ABC*.



(3 marks)

3. The diagram shows a sketch of triangle *ABC*.

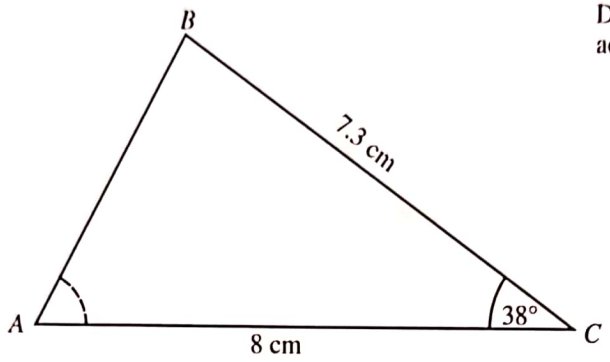
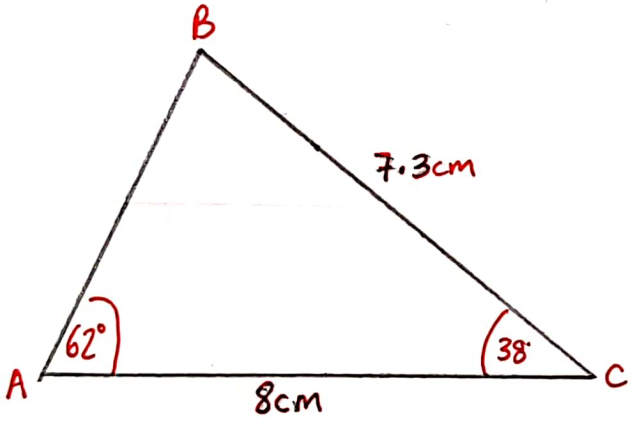


Diagram **NOT** accurately drawn

BC = 7.3 cm.
AC = 8 cm.
Angle *C* = 38°.

(a) Make an accurate drawing of triangle *ABC*.



(3)

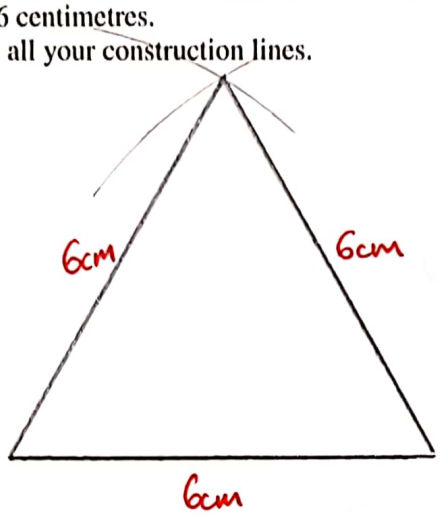
(b) Measure the size of angle *A* on your diagram.

62° .....°

(1)

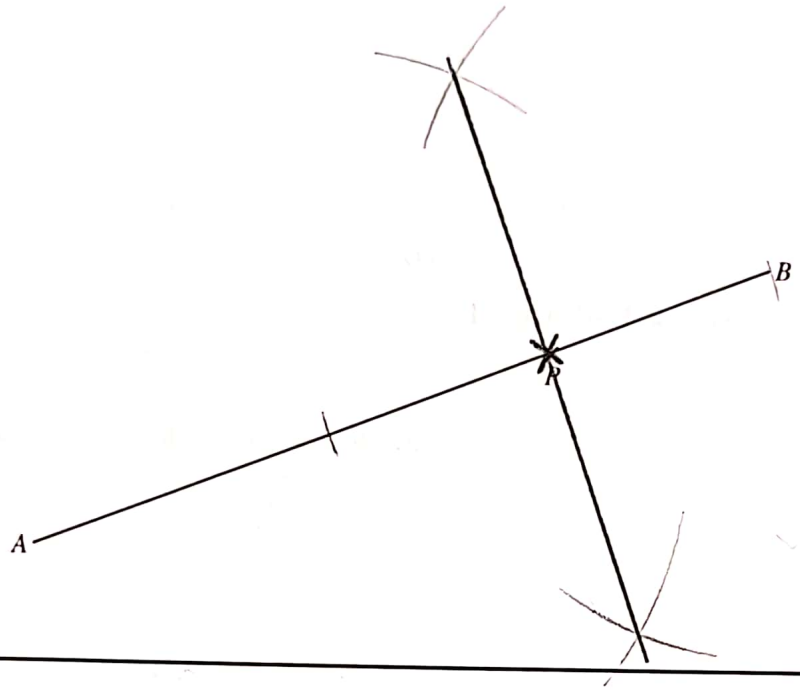
(4 marks)

4. In the space below, use ruler and compasses to **construct** an equilateral triangle with sides of length 6 centimetres.
You must show all your construction lines.



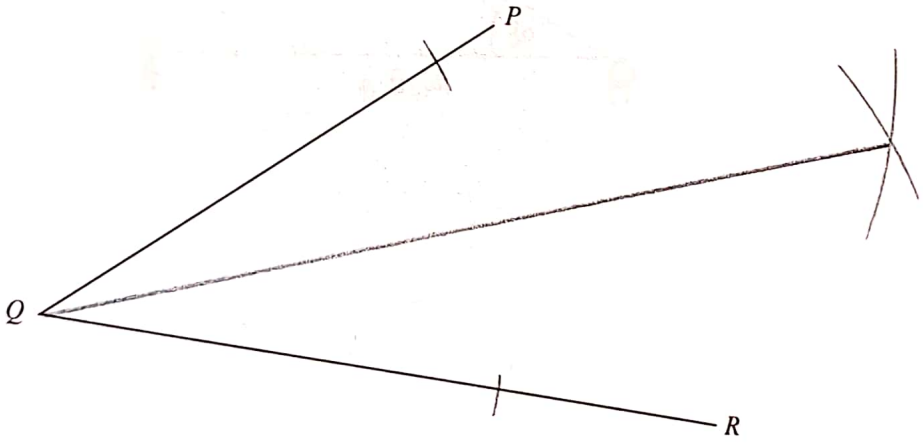
(3 marks)

5. Use the ruler and compasses to **construct** the perpendicular to the line segment AB that passes through the point P.
You must show all construction lines.



(3 marks)

6.



Use ruler and compasses to **construct** the bisector of angle PQR.
You must show all your construction lines.

(3 marks)

7.

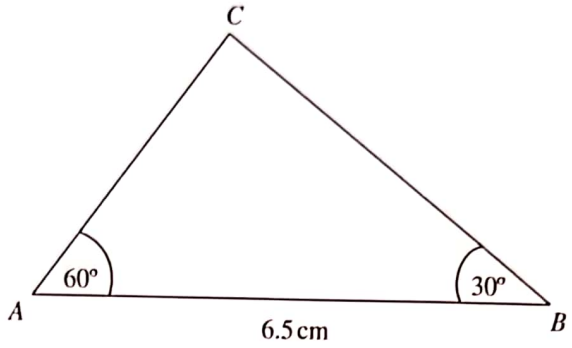
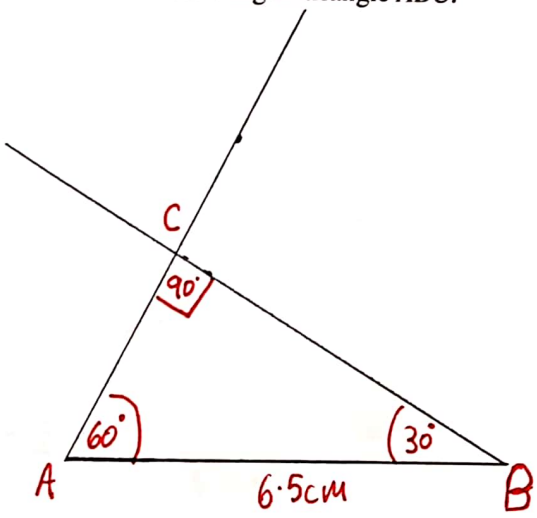


Diagram **NOT** accurately drawn

(a) Make an accurate drawing of triangle *ABC*.



(3)

(b) Measure the size of the angle at *C* in your triangle.

90 .....°

(1)

(4 marks)

8.

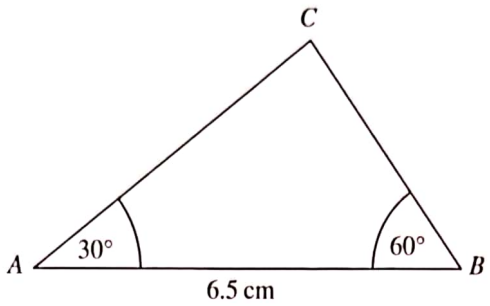
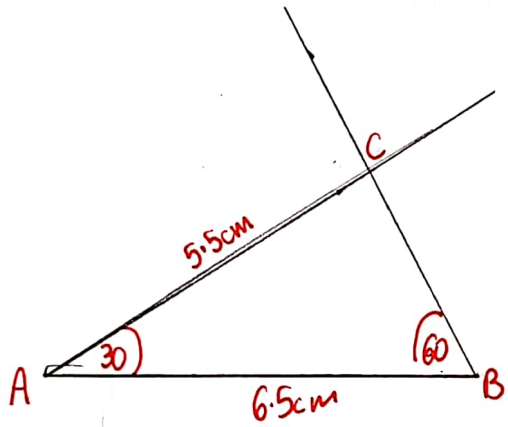


Diagram **NOT** accurately drawn

(a) Make an accurate drawing of this triangle.



(2)

(b) Measure the length of the line AC on your drawing.
You must state the units.

5.5cm

(2)

The size of the angle in the triangle at C is 90°.

(c) Write down the mathematical name for this type of angle.

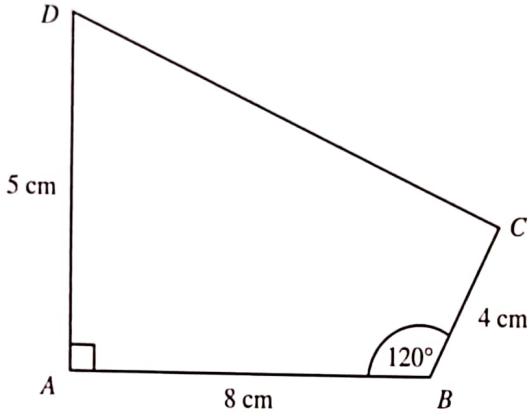
right angle

(1)

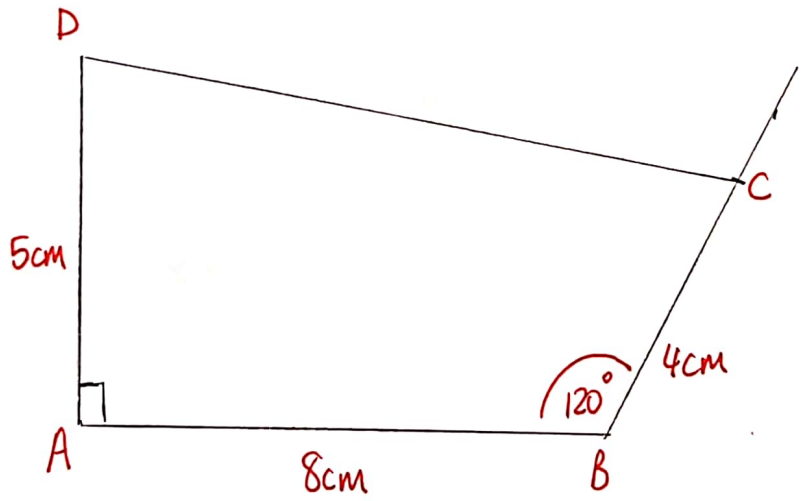
(5 marks)

9.

Diagram **NOT** accurately drawn



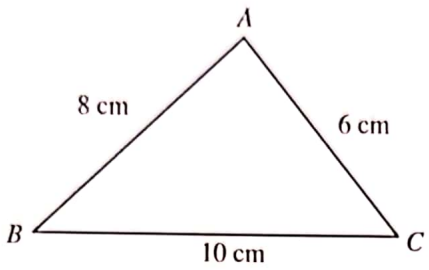
Make an accurate drawing of the quadrilateral *ABCD* in the space below.



(4 marks)

10.

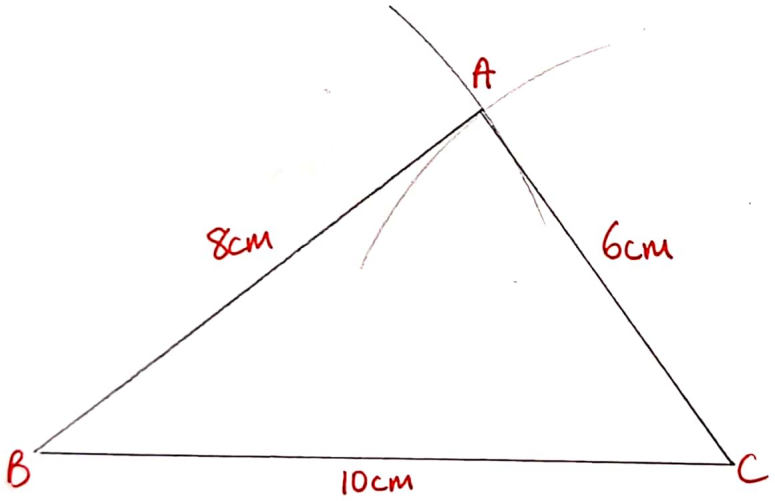
Diagram **NOT** accurately drawn



ABC is a triangle.
AB = 8 cm.
AC = 6 cm.
BC = 10 cm.

Use ruler and compasses to construct an accurate drawing of triangle *ABC*.

You must show all your construction lines.



(3 marks)

11. Here is a sketch of a rhombus.

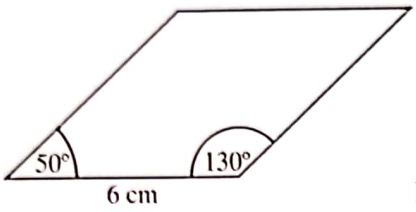
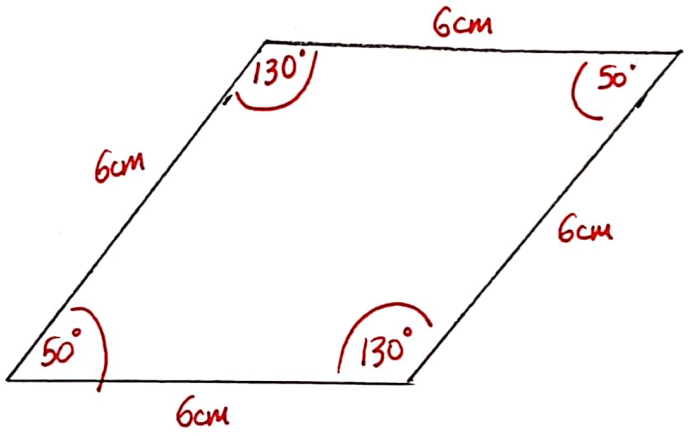


Diagram **NOT** accurately drawn

The rhombus has a side of length 6 cm.
One angle of the rhombus is 50°.
Another angle of the rhombus is 130°.

Use a ruler and a protractor to make an accurate drawing of the rhombus.



(4 marks)