Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Sine and Cosine Rules 2

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

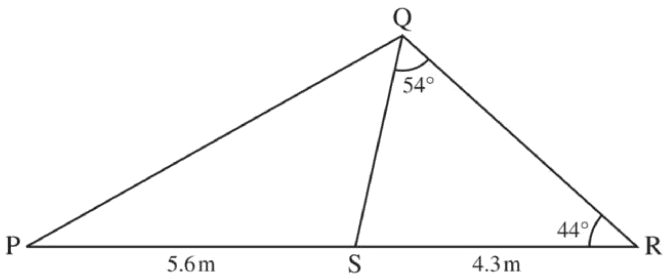
Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

1)



PQR is a triangle and S is a point on the side PR.
PS = 5.6 m and SR = 4.3 m.
Angle QRS = 44° and angle SQR = 54°.

(a) Find the length of QS.

Answer _____ m [3]

(b) Find the length of PQ.

Answer _____ m [3]

(c) Find the area of triangle PQS.

Answer _____ [3]

2) The diagram shows the position of two trees D and E on the bank of a river.
The river banks are parallel.
F is the position of another tree on the opposite side of the river.

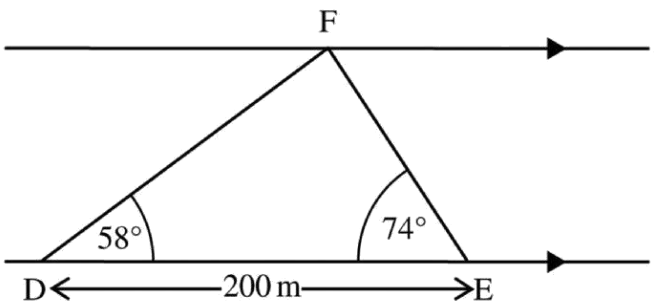


Diagram not drawn accurately

Calculate the width of the river.

Answer _____ m [4]

3)

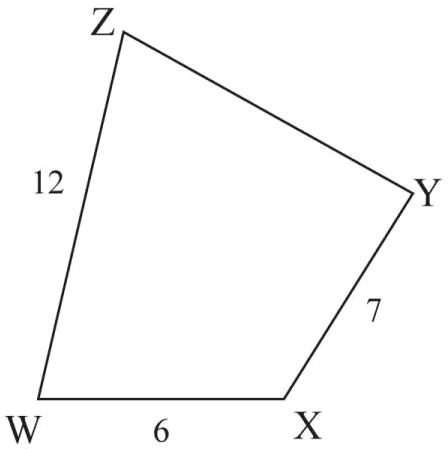


Diagram not drawn accurately

In a quadrilateral WXYZ, WX = 6 cm, XY = 7 cm and WZ = 12 cm.

Angle WXY = 120° and angle WYZ = 70°

Calculate angle WZY.

Answer _____ ° [5]

4)

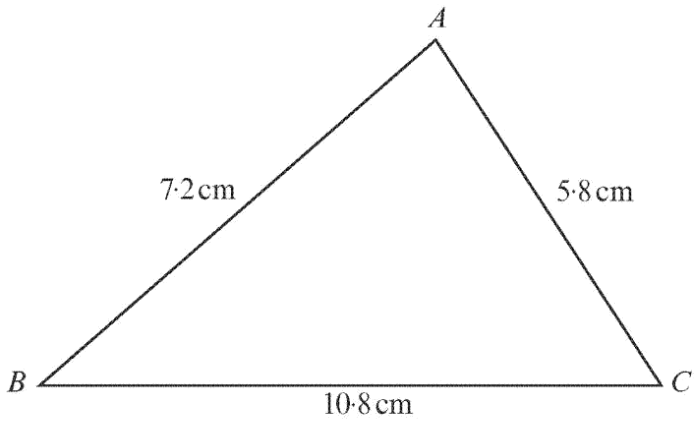


Diagram not drawn to scale

(a) Calculate the size of $B\hat{A}C$.

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[4]

(b) Calculate the area of triangle ABC.

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[3]

5) Three triangles are joined together to form the pentagon *ABCDE* shown below.

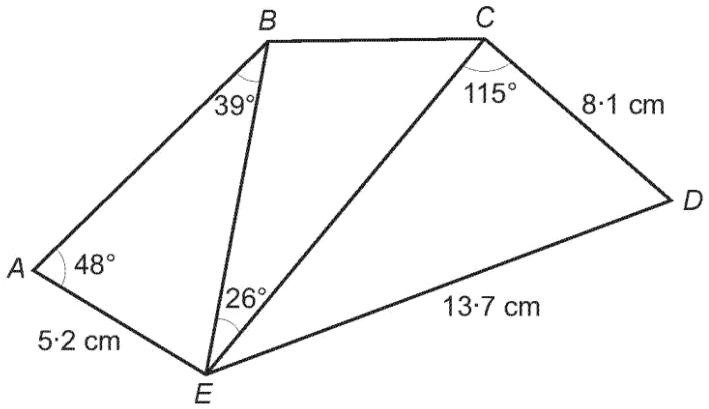

Diagram not drawn to scale

Calculate the length *AD*. [7]

6)

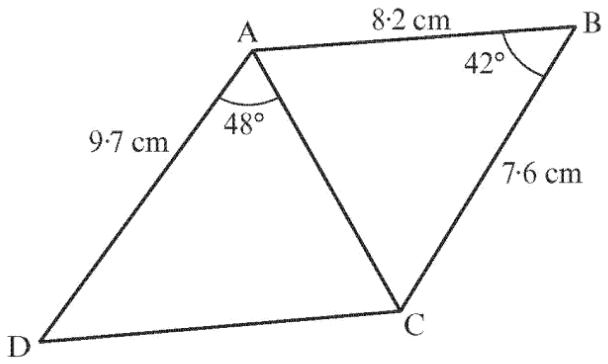

Diagram not drawn to scale

Calculate the area of the quadrilateral *ABCD*.

[5]

7) The diagram shows a plan of drains connecting houses at points *A*, *B*, *C*, *P* and *Q*.

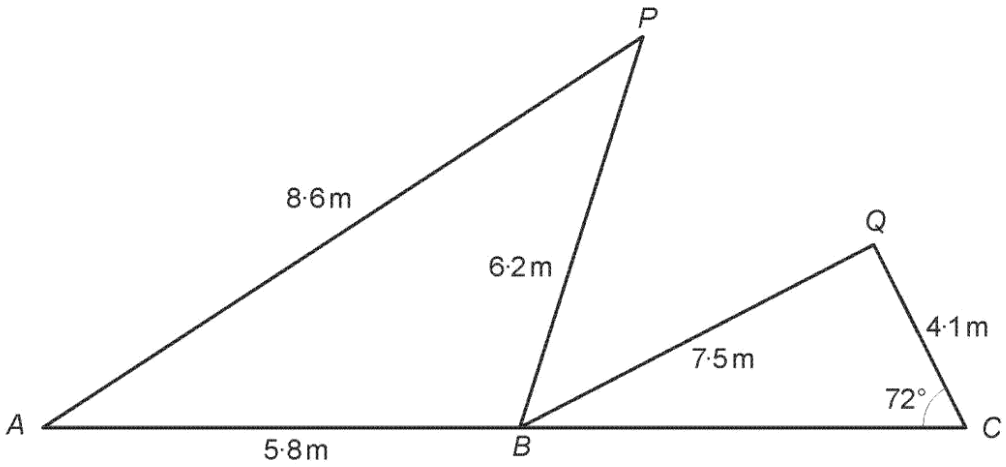

Diagram not drawn to scale

Given that *A*, *B* and *C* lie on a straight line, calculate the size of $P\hat{B}Q$.
Give your answer correct to the nearest degree. [7]

8) A flagpole AB, of height 5·6 m, stands on top of a wall BC.
ABC forms a straight line.
The wall leans slightly so that it makes an angle of 94° with the horizontal ground CD.
The angle of elevation of the **top of the wall**, B, from the point D is 40°.

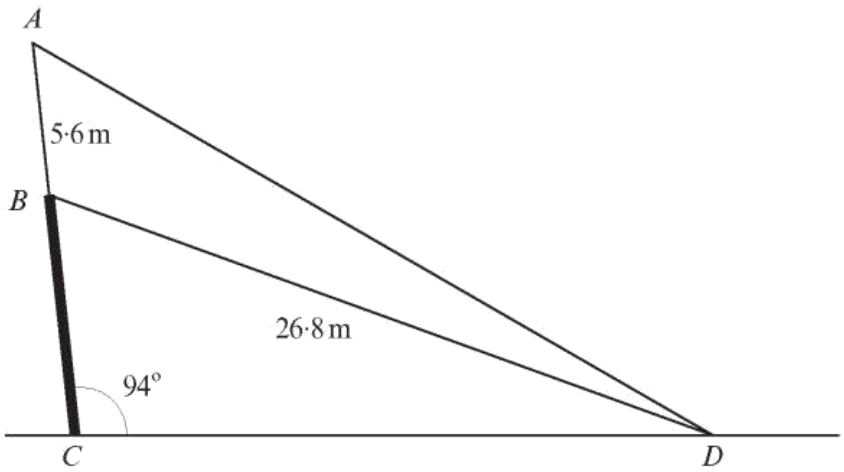

Diagram not drawn to scale

Given that $BD = 26·8$ m, calculate AD.

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[4]

9) A gardening tool made of steel has been manufactured by attaching two triangular pieces onto a piece in the shape of a parallelogram.
Using the information given in the diagram, calculate the size of $B\hat{F}C$. [7]

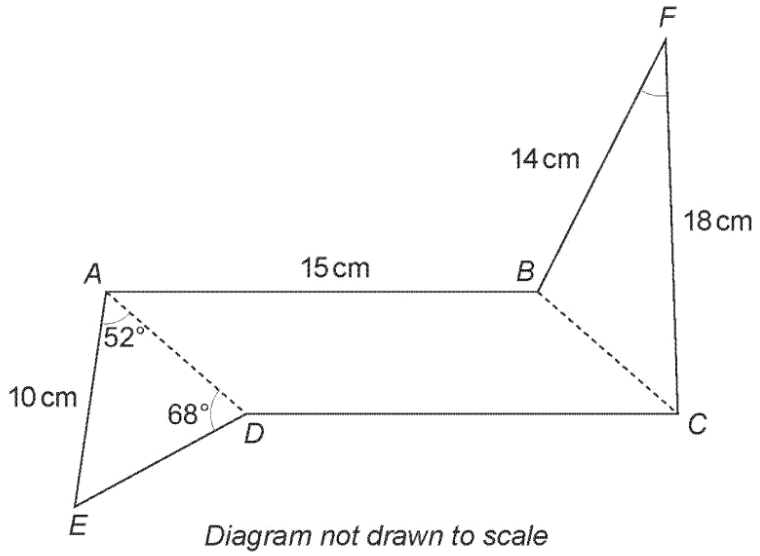

Diagram not drawn to scale

10)

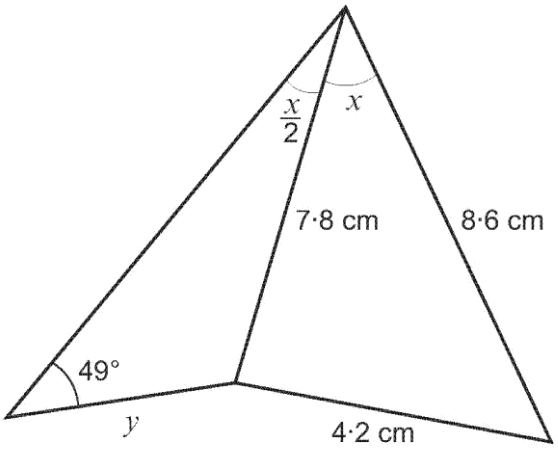

Diagram not drawn to scale

Calculate the length y. [7]

11)

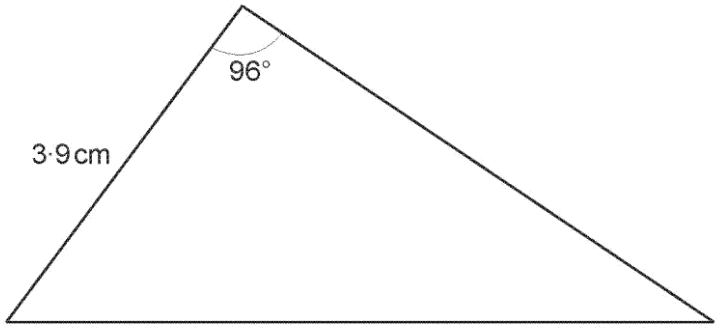

Diagram not drawn to scale

The area of the triangle shown above is $22{\cdot}8\,cm^2$.
Calculate the length of the longest side of the triangle. [7]

12) A cruise ship sets out from port *P*.
It sails 95 km on a bearing of 058° to its first port of call, *A*.
The following day, it sails 147 km on a bearing of 310° to its second port of call, *B*.
The day after that, it sails back to port *P* by the shortest route.

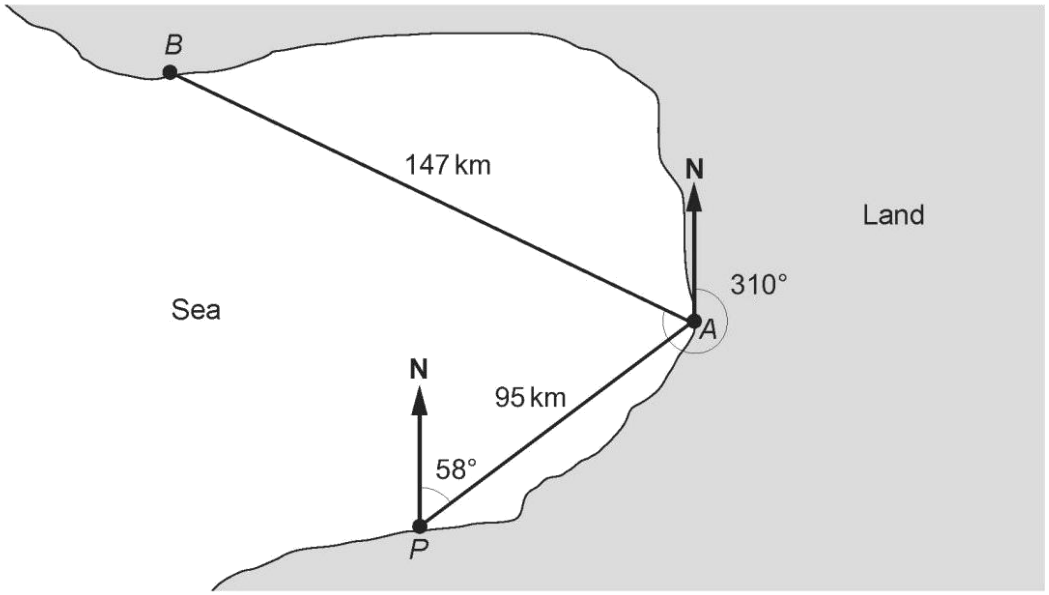

Diagram not drawn to scale

Calculate how far the cruise ship sails to travel from *B* to *P*. [4]

13) The diagram shows a quadrilateral $ABCD$. Angle $D\hat{A}B$ is acute.

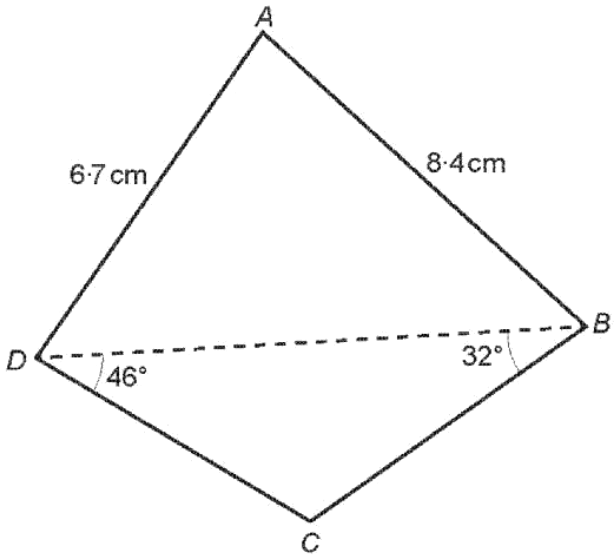

Diagram not drawn to scale

The area of triangle ABD is $22{\cdot}8\,cm^2$.
Calculate the perimeter of the quadrilateral $ABCD$. [10]

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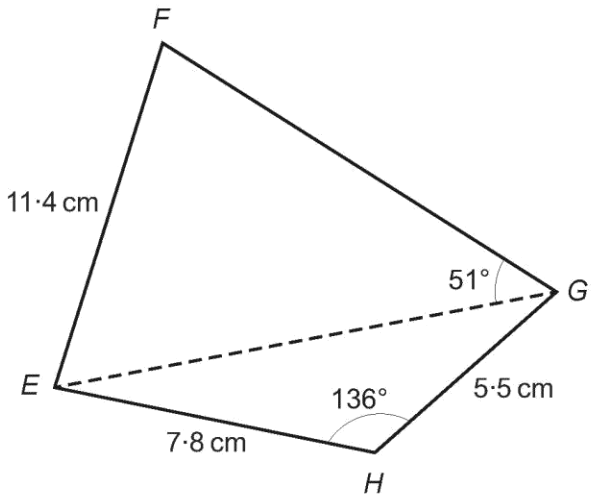

Diagram not drawn to scale

Calculate the area of *EFGH*. [9]