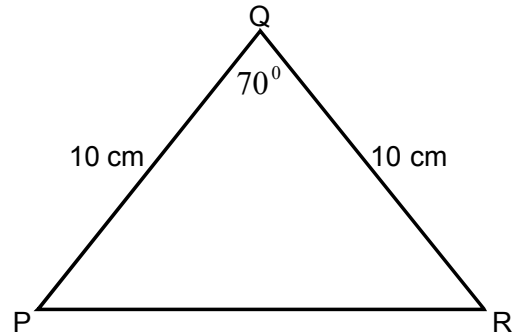


Trigonometry (Sine and Cosine Rules)

1. A cross-section of a pyramid is shown.

$PQ = QR = 10$ cm. Angle $PQR = 70^\circ$.

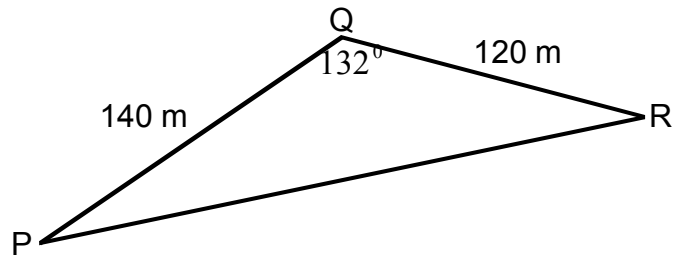
Calculate the area of this cross-section.



2. A triangular field is shown.

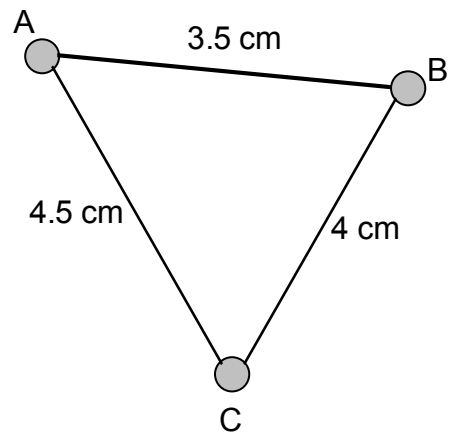
$PQ = 140$ metres, $QR = 120$ metres and angle $PQR = 132^\circ$.

Calculate the length of PR.



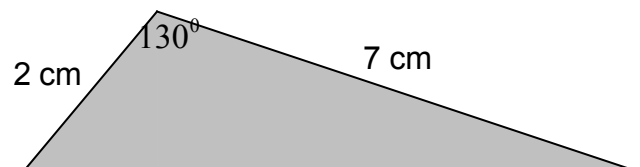
3. Three holes are to be positioned and drilled as shown.

Calculate the size of angle ABC.



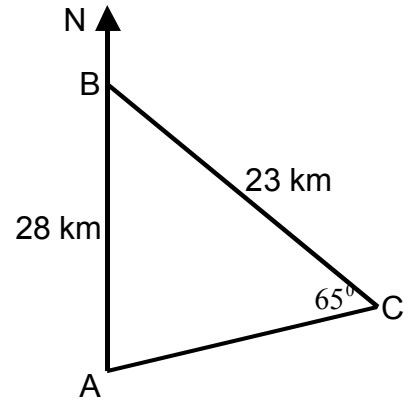
4. A piece of metal was cut in the shape of a triangle.

Calculate the area of this piece of metal.



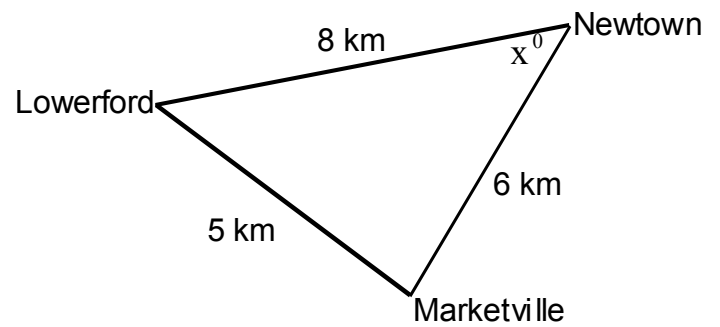
5. In the diagram opposite AB represents a main road 28 kilometres long running due north. AC and CB represent secondary roads.

Calculate the size of angle BAC.



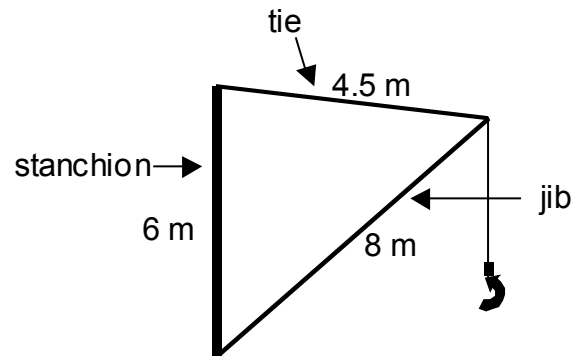
6. A cargo ship leaves Lowerford. It travels 5 km to Marketville and then 6 km to Newtown delivering supplies. The ship then returns to Lowerford, a distance of 8 km.

Calculate the size of angle x° .



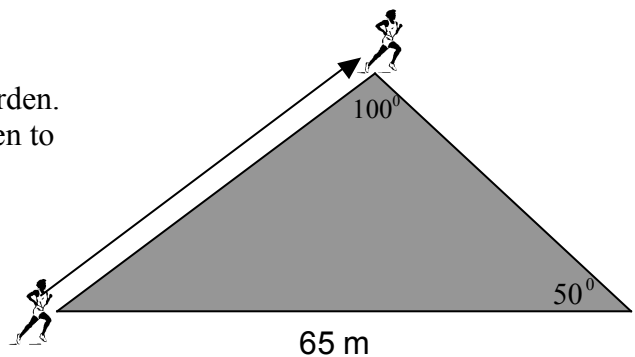
7. A jib crane consists of a vertical stanchion 6 metres long, a jib 8 metres long and a tie 4.5 metres long.

Calculate the size of the angle between the jib and the stanchion.



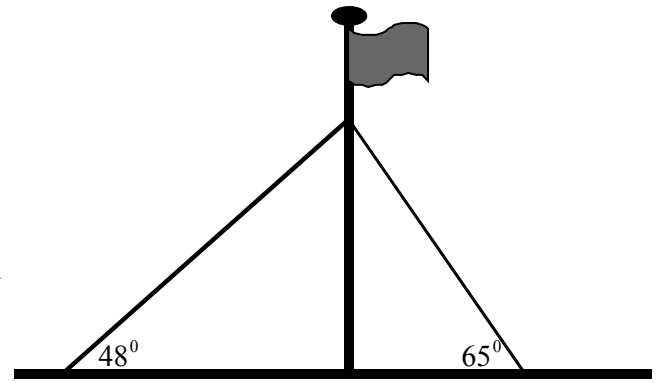
8. The diagram shows a triangular shaped garden. A jogger runs from one corner of the garden to another, as shown..

Calculate how far he has run.



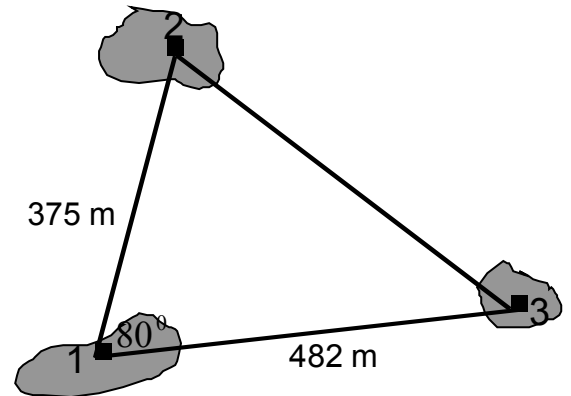
9. Two wires holding a flagpole are fastened at the same point on the flagpole and two points on the ground 12 metres apart.

The longer wire is frayed and has to be replaced.
What length of wire must be bought.



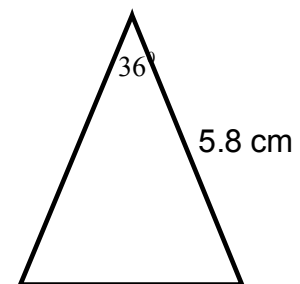
10. The first three holes on a golf course are shown in the diagram opposite.

Calculate the distance from the second to the third hole.



11. A piece of plastic is cut out in the shape of an isosceles triangle.

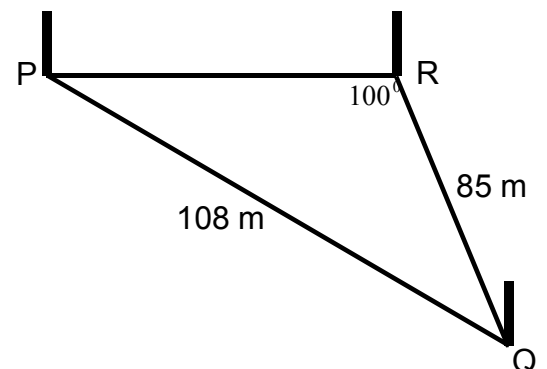
Calculate the area of this piece of plastic.



12. A triangle has sides 4.3 cm, 6.1 cm and 5.4 cm. Calculate the size of the smallest angle in this triangle.

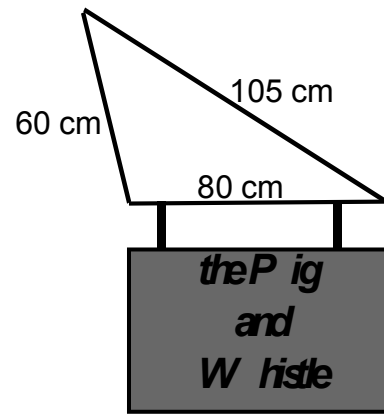
13. Three markers P, Q and R are placed at the corners of a triangular field.

Calculate the size of angle RPQ.



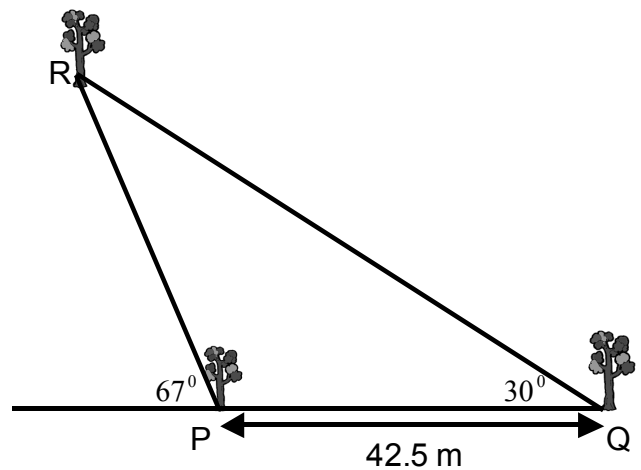
14. An inn sign is to be hung from a triangular metal bracket with lengths as shown.

Calculate the largest angle in the bracket.



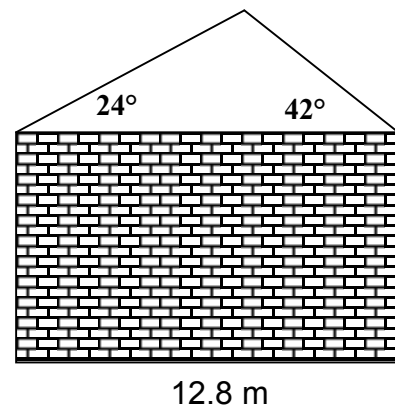
15. Three oak trees have been surveyed and measurements taken as shown opposite.

Calculate the distance from the tree marked R to the tree marked Q.



16. The end wall of a bungalow is in the shape of a rectangle and a triangle as shown.

Calculate the length of the longer sloping edge of the roof.



17. The diagram shows the relative positions of a church, a statue and a flagpole at the corners of a park

(a) Calculate the distance from the church to the statue.

(b) Calculate the area covered by the park.

