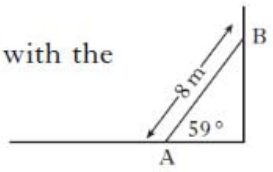
Credit Revision - Trigonometry
(Area of a Triangle, Sine rule, Cosine rule)

2012 Paper 2

7. A heavy metal beam, AB, rests against a vertical wall as shown.

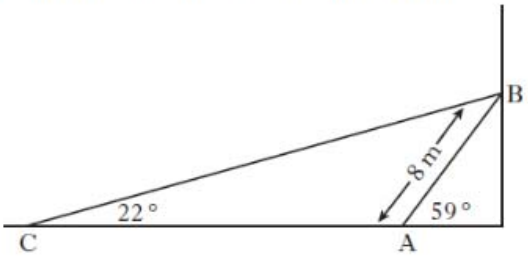
The length of the beam is 8 metres and it makes an angle of 59° with the ground.



A cable, CB, is fixed to the ground at C and is attached to the top of the beam at B.

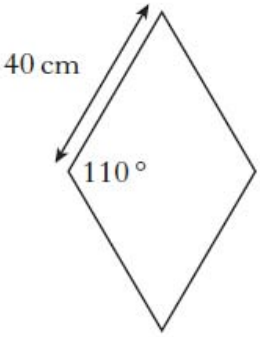
The cable makes an angle of 22° w

Calculate the length of cable CB.



4RE

9. Paving stones are in the shape of a rhombus.



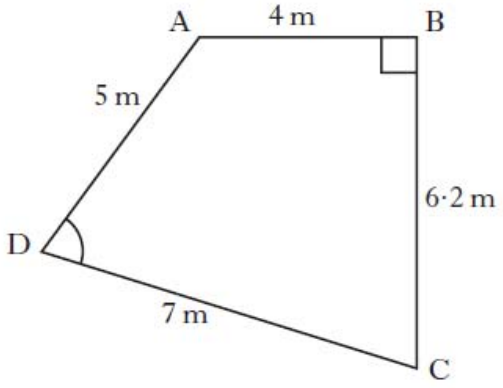
The side of each rhombus is 40 centimetres long.

The obtuse angle is 110°.

Find the area of one paving stone.

4RE

11. Quadrilateral ABCD with angle ABC = 90° is shown below.



- AB = 4 metres
- BC = 6·2 metres
- CD = 7 metres
- AD = 5 metres

(*a*) Calculate the length of AC.

1 KU

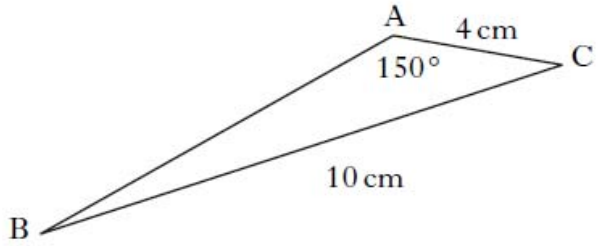
(*b*) Calculate the size of angle ADC.

4RE

2011 Paper 1

10. In triangle ABC

- AC = 4 centimetres
- BC = 10 centimetres
- angle BAC = 150°



Given that $\sin 30° = \frac{1}{2}$, show that $\sin B = \frac{1}{5}$. 4RE

2011 Paper 2

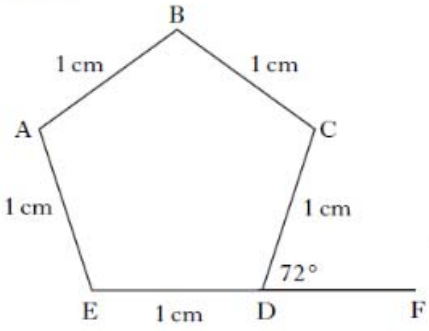
7. ABCDE is a regular pentagon with each side 1 centimetre.

Angle CDF is 72°.

EDF is a straight line.

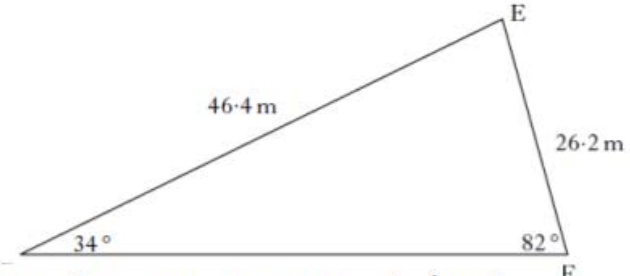
(*a*) Write down the size of angle ABC. 1KU

(*b*) Calculate the length of AC. 3KU



2010 Paper 2

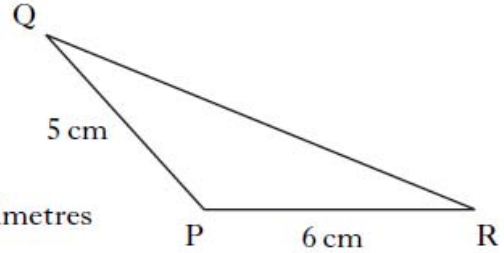
8. As part of their training, footballers run around a triangular circuit DEF.



How many **complete** circuits must they run to cover **at least** 1000 metres? 4RE

10. In triangle PQR:

- PQ = 5 centimetres
- PR = 6 centimetres
- area of triangle PQR = 12 square centimetres
- angle QPR is **obtuse**.

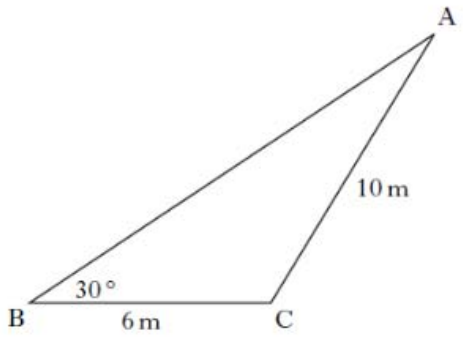


Calculate the size of angle QPR. 4RE

2009 Paper 1

11. In triangle ABC:

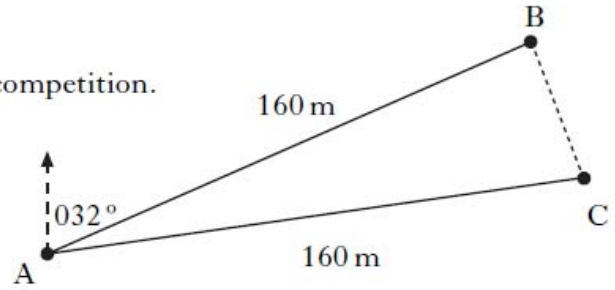
- BC = 6 metres
- AC = 10 metres
- angle ABC = 30 °.



Given that sin 30 ° = 0·5, show that sin A = 0·3. 3RE

2009 Paper 2

9. Jane is taking part in an orienteering competition.



She should have run 160 metres from A to B on a bearing of 032 °.

However, she actually ran 160 metres from A to C on a bearing of 052 °.

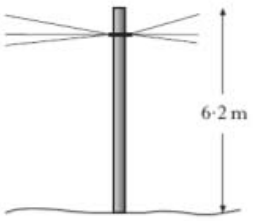
(*a*) Write down the size of angle BAC. 1KU

(*b*) Calculate the length of BC. 3RE

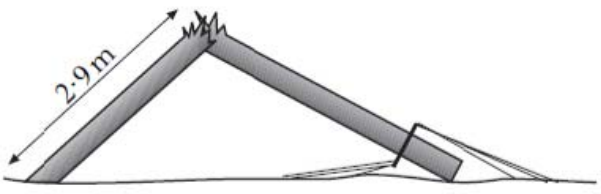
(*c*) What is the bearing from C to B? 2RE

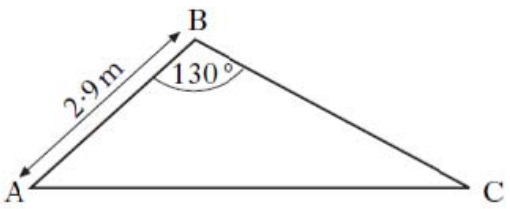
2008 Paper 2

7. A telegraph pole is 6·2 metres high.



The wind blows the pole over into the position as shown below.



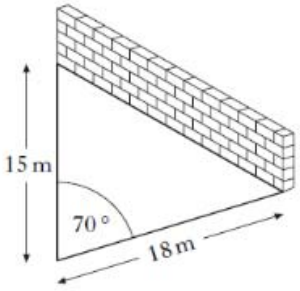


AB is 2·9 metres and angle ABC is 130 °.

Calculate the length of AC. 4RE

2008 Paper 2

8. A farmer builds a sheep-pen using two lengths of fencing and a wall.



The two lengths of fencing are 15 metres and 18 metres long.

(*a*) Calculate the area of the sheep-pen, when the angle between the fencing is 70 °. 3KU

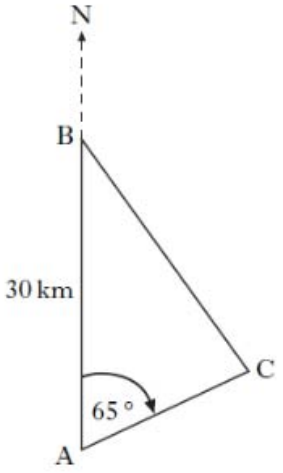
(*b*) What angle between the fencing would give the farmer the largest possible area? 1RE

2007 Paper 2

6. Brunton is 30 kilometres due North of Appleton.

From Appleton, the bearing of Carlton is 065 °.

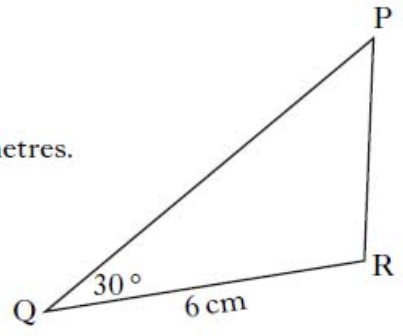
From Brunton, the bearing of Carlton is 153 °.



Calculate the distance between Brunton and Carlton. 4RE

8. In triangle PQR:

- QR = 6 centimetres
- angle PQR = 30 °
- area of triangle PQR = 15 square centimetres.



Calculate the length of PQ.