

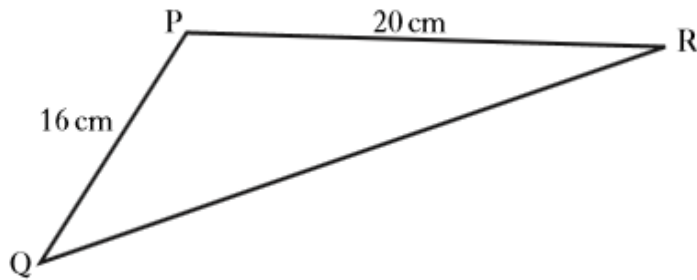
Now
Revise

Routine – Non
Calculator

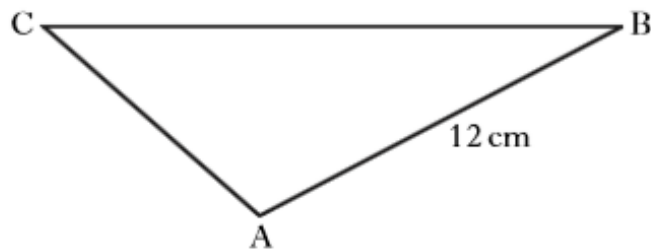
Trig Rules
Applications 1.1

Triangle PQR is shown below.

1

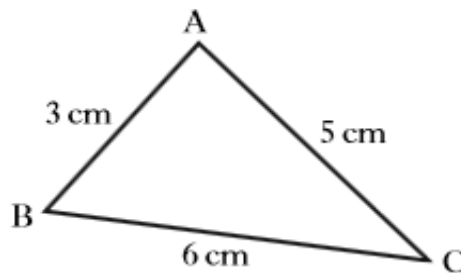


If $\sin P = \frac{1}{4}$, calculate the area of triangle PQR.



2

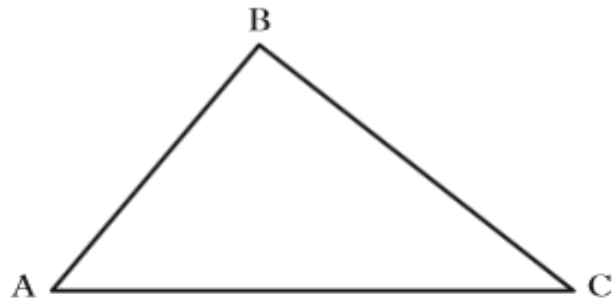
In triangle ABC, $AB = 12$ centimetres, $\sin C = \frac{1}{2}$ and $\sin B = \frac{1}{3}$.
Find the length of side AC.



3

In triangle ABC, show that $\cos B = \frac{5}{9}$.

4



The area of triangle ABC is 20 square centimetres.

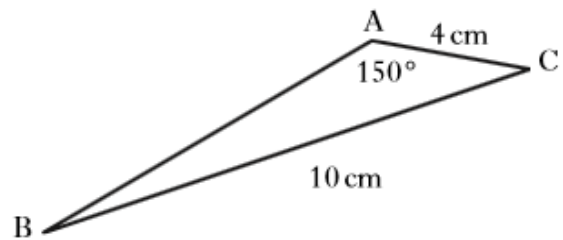
$AC = 16$ centimetres and $\sin C = \frac{1}{4}$.

Calculate the length of BC.

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In triangle ABC

- $AC = 4$ centimetres
- $BC = 10$ centimetres
- angle $BAC = 150^\circ$

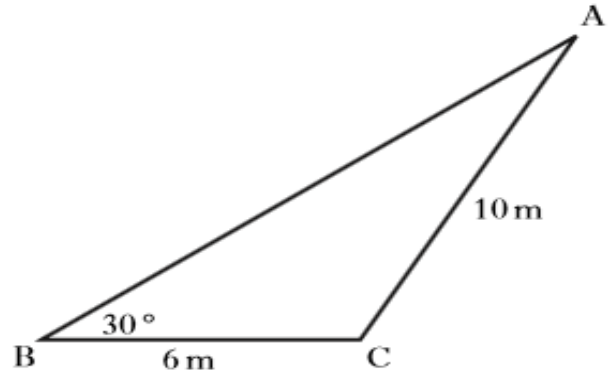


Given that $\sin 30^\circ = \frac{1}{2}$, show that $\sin B = \frac{1}{5}$.

6

In triangle ABC:

- $BC = 6$ metres
- $AC = 10$ metres
- $\text{angle } ABC = 30^\circ$.



Given that $\sin 30^\circ = 0.5$, show that $\sin A = 0.3$.

Now
Revise

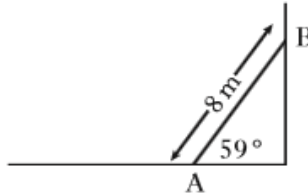
Routine –
Calculator

Trig Rules
Applications 1.1

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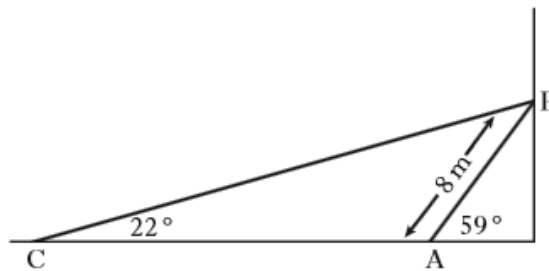
A heavy metal beam, AB, rests against a vertical wall as shown.

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



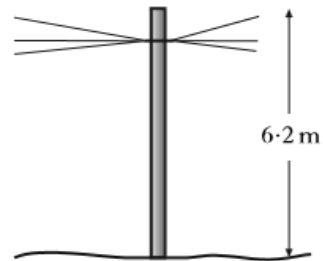
A cable, CB, is fixed to the ground at C and is attached to the top of the beam at B.

The cable makes an angle of 22° with the ground.



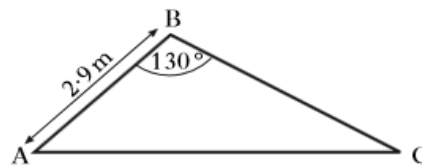
Calculate the length of cable CB.

A telegraph pole is 6.2 metres high.



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



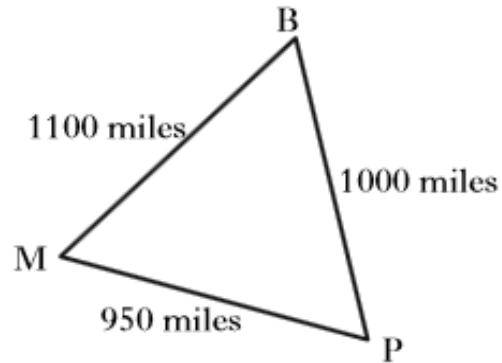
AB is 2.9 metres and angle ABC is 130° .

Calculate the length of AC.

9

The Bermuda triangle is an area in the Atlantic Ocean where many planes and ships have mysteriously disappeared.

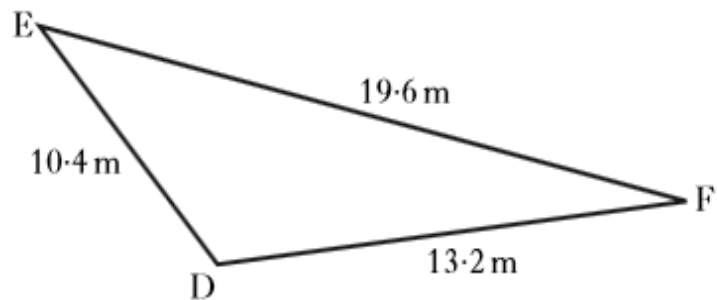
Its vertices are at Bermuda (B), Miami (M) and Puerto Rico (P).



Calculate the size of angle BPM.

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Triangle DEF is shown below.



It has sides of length 10.4 metres, 13.2 metres and 19.6 metres.

Calculate the size of angle EDF.

Do not use a scale drawing.

Now
Revise

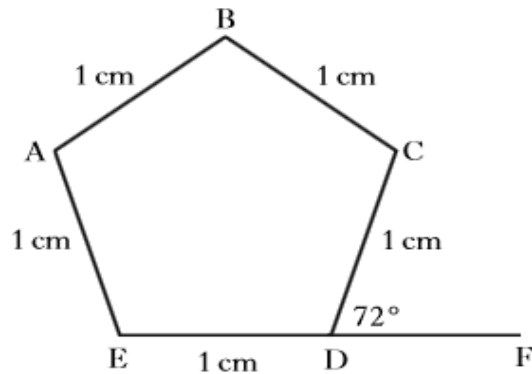
Unseen and
Non Routine

Trig Rules

Applications 1.1

ABCDE is a regular pentagon with each side 1 centimetre.
Angle CDF is 72° .
EDF is a straight line.

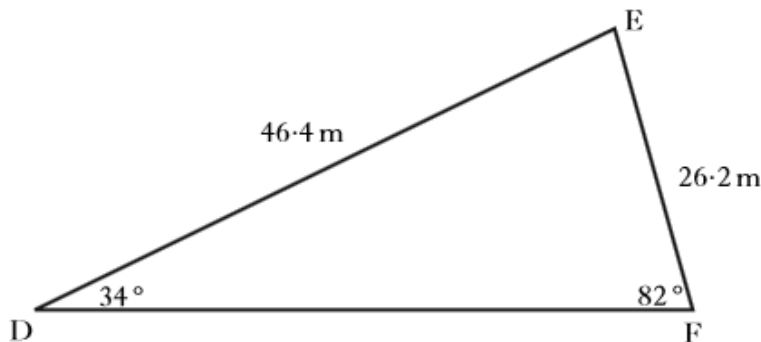
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- (a) Write down the size of angle ABC.
(b) Calculate the length of AC.

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

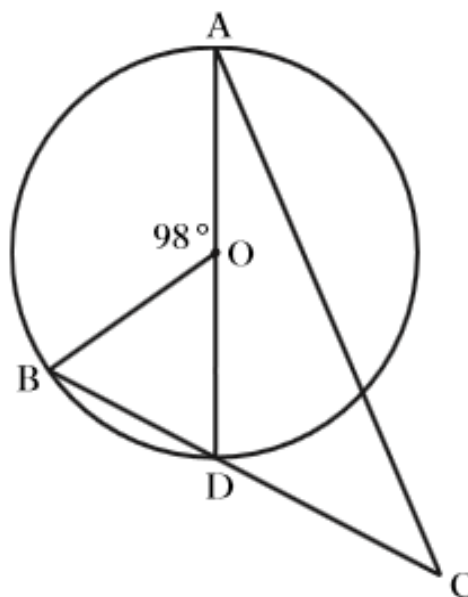
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- $\angle EDF = 34^\circ$
- $\angle DFE = 82^\circ$
- $DE = 46.4$ metres
- $EF = 26.2$ metres

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

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AD is a diameter of a circle, centre O.

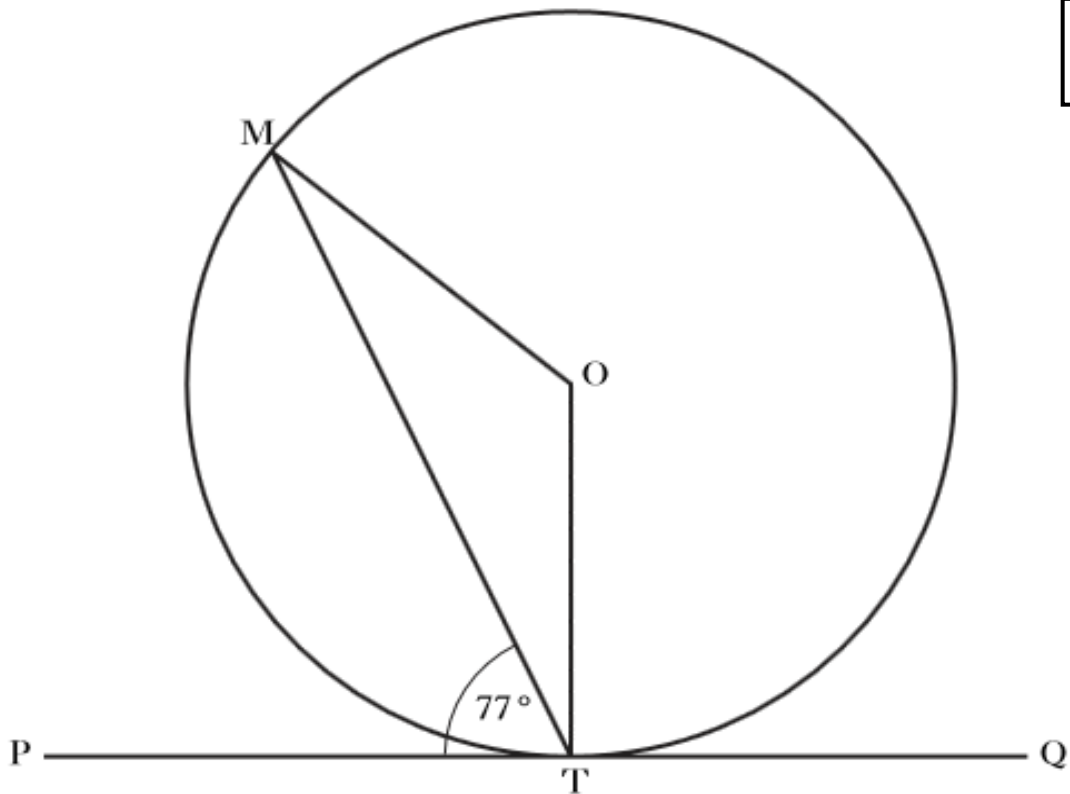
B is a point on the circumference of the circle.

The chord BD is extended to a point C, outside the circle.

Angle BOA = 98° .

DC = 9 centimetres. The radius of the circle is 7 centimetres.

Calculate the length of AC.

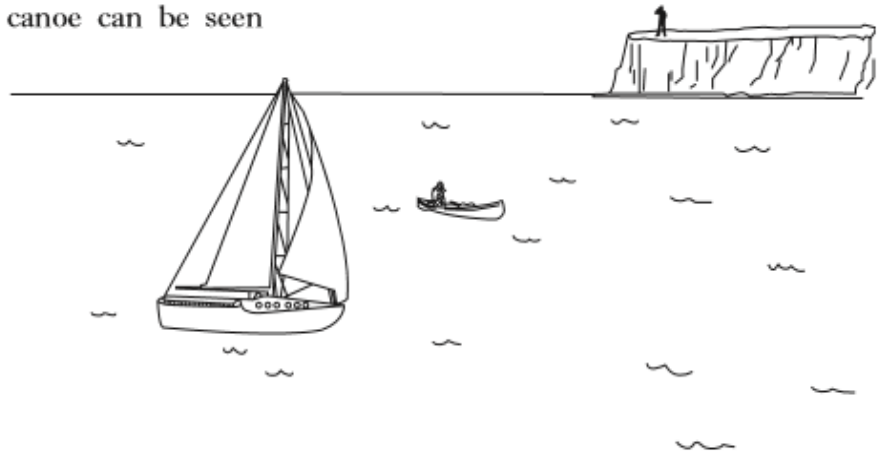


The tangent PQ touches the circle, centre O , at T .
Angle MTP is 77° .

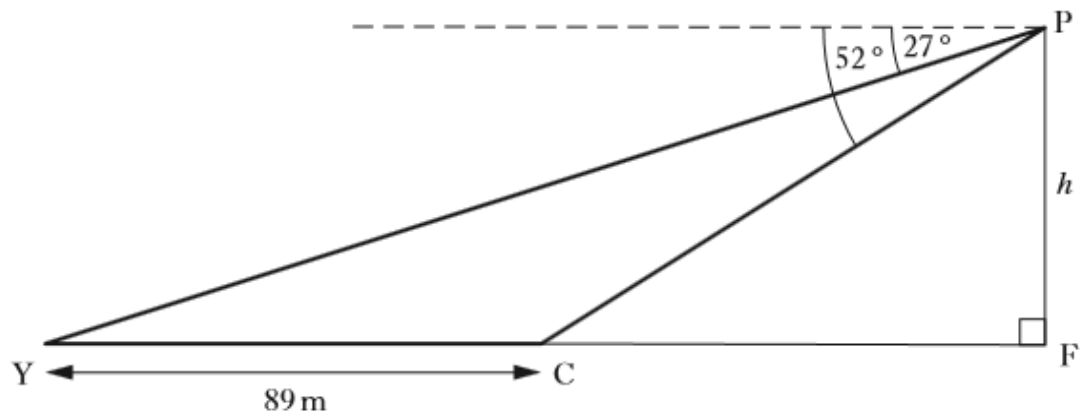
- (a) Calculate the size of angle MOT .
- (b) The radius of the circle is 8 centimetres.
Calculate the length of chord MT .

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A yacht and a canoe can be seen from a clifftop.



In the diagram below, Y and C represent the positions of the yacht and the canoe.



From a point P on the clifftop:

- the angle of depression of the yacht is 27° ;
- the angle of depression of the canoe is 52° .

The distance between the yacht and the canoe is 89 metres.

Calculate the height, h , metres, of the cliff.