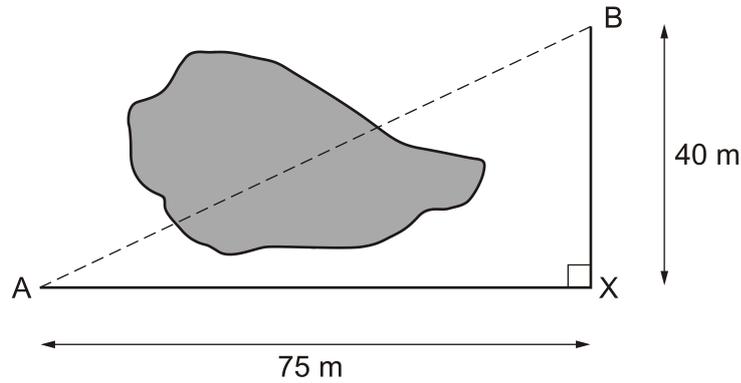


1. Two trees, A and B, are separated by a lake. Jo wants to find the distance between the trees.



Not to scale

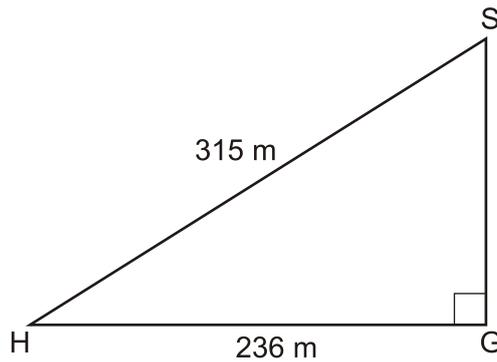
From tree A she walks 75 metres due east to point x. She then walks 40 metres due north to tree B.

Calculate the distance, AB, between the two trees.

..... m

[3]

- 2.



Not to scale

Razia's home (H) is next to her school playing field. She can walk 315 m across the playing field to school (S), or she can walk 236 m along the road to the school gate (G) then up the drive (GS). The angle at G is 90° .

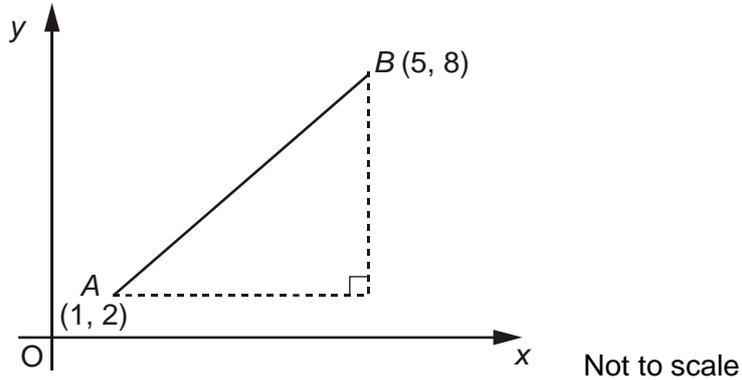
Work out the distance GS.

.....

.....

..... m [3]

3.



The diagram above shows the points $A(1, 2)$ and $B(5, 8)$.

(a) Find the coordinates of the midpoint of AB .

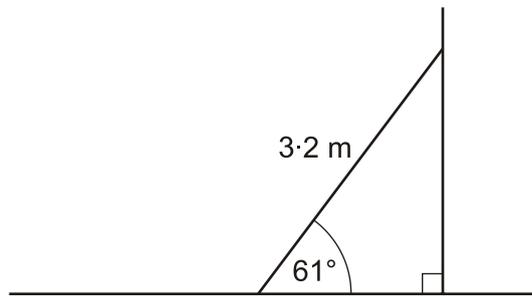
.....
(.....,) [2]

(b) Calculate the length of the line AB .

.....
.....
..... units [3]

4. A ladder, 3.2 m long, leans against a wall. The ladder makes an angle of 61° with the ground.

Calculate how far up the wall the ladder reaches. Give your answer to a suitable degree of accuracy.



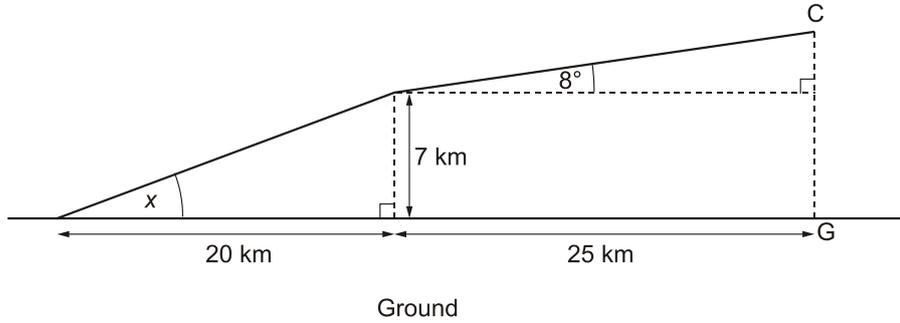
Not to scale

..... m [4]

5. An aeroplane takes off and climbs to its cruising height in two stages.

Stage one: the aeroplane climbs to a height of 7 km and covers a horizontal distance of 20 km.

Stage two: the aeroplane climbs at an angle of 8° to the horizontal and covers a horizontal distance of 25 km.



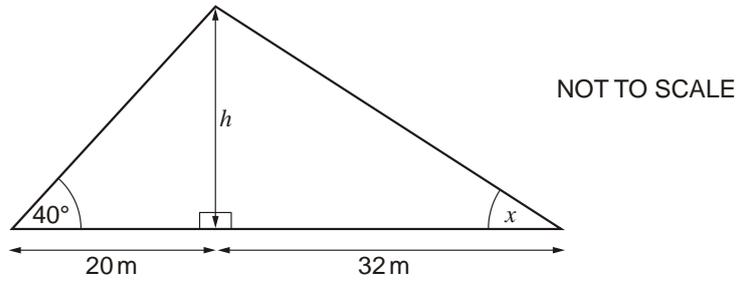
(a) Calculate x , the angle of climb in stage one.
You must show your method.

..... $^\circ$ [3]

(b) Calculate CG, the cruising height of the aeroplane.
You must show your method.

..... km [3]

6.



(a) Calculate h .

.....
.....
.....

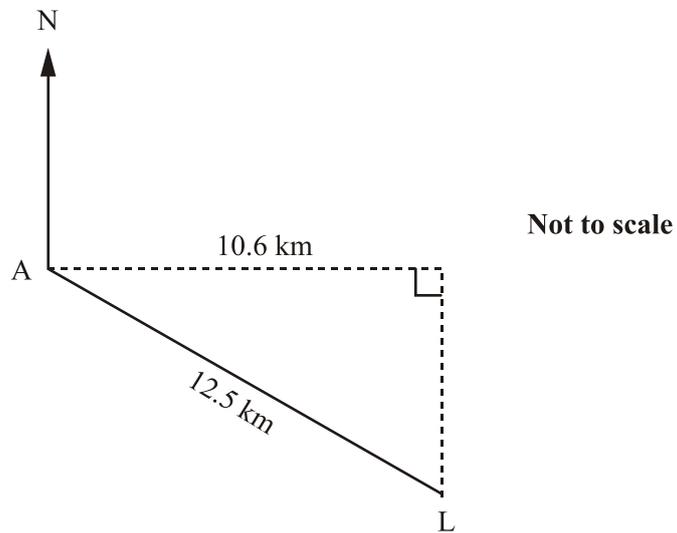
..... m [3]

(b) Calculate angle x .

.....
.....
.....

..... ° [3]

7.

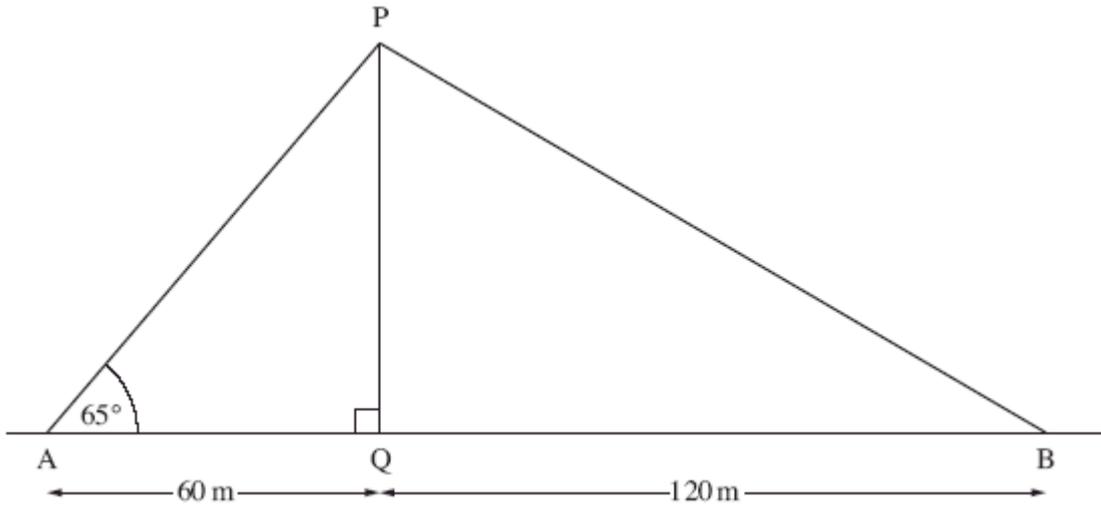


A ship at A is 12.5 km from a lighthouse (L).
A is 10.6 km West of L.

Calculate the bearing of L from A.

..... ° [4]

8.



Not to scale

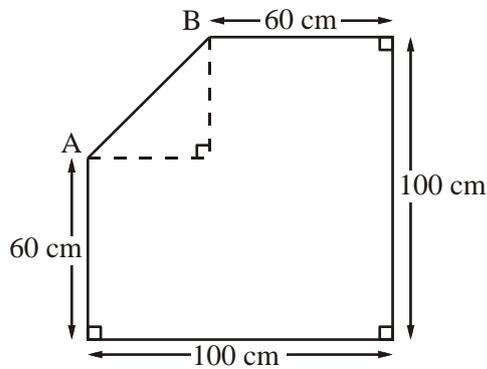
A tower, PQ, is built on horizontal ground.
 From A, the angle of elevation of the top of the tower is 65° .

Work out the angle of elevation of the top of the tower from B.

..... $^\circ$ [6]

9. Rebecca is designing a new kitchen.

This is the plan view of a corner unit with measurements as shown.

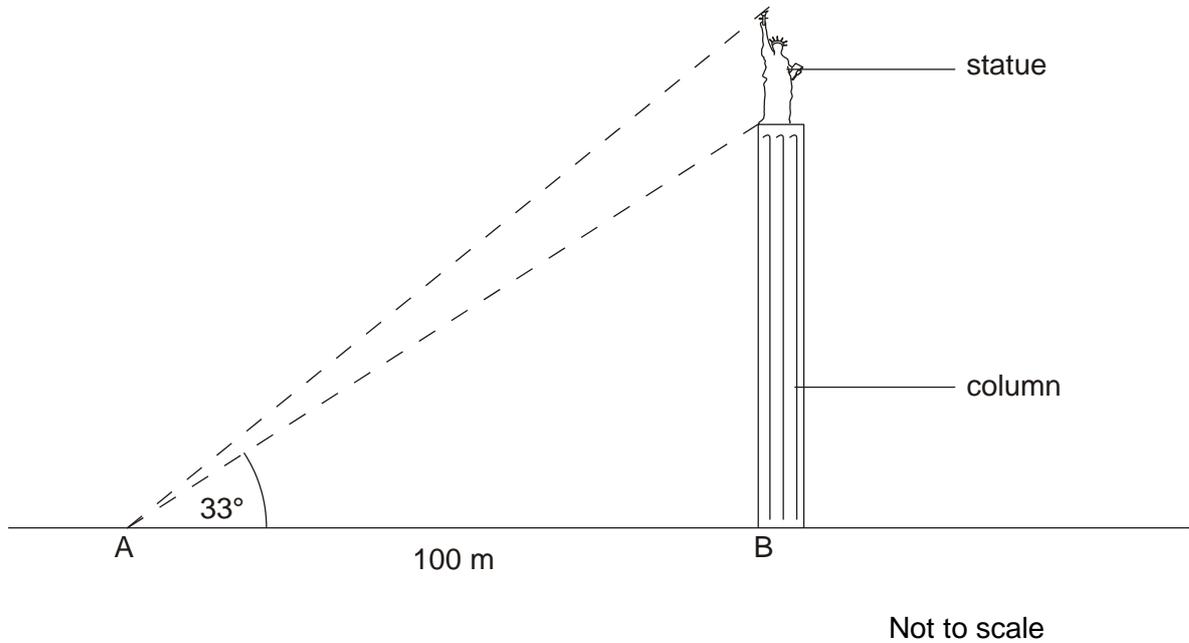


Not to scale

Calculate the distance AB.

..... cm [4]

10.



A statue stands on top of a vertical column.
From point A the angle of elevation of the bottom of the statue is 33° and the angle of elevation of the top of the statue is 39° .
The horizontal distance from A to the base of the column B is 100 metres.

Calculate the height of the statue.

..... m

[6]