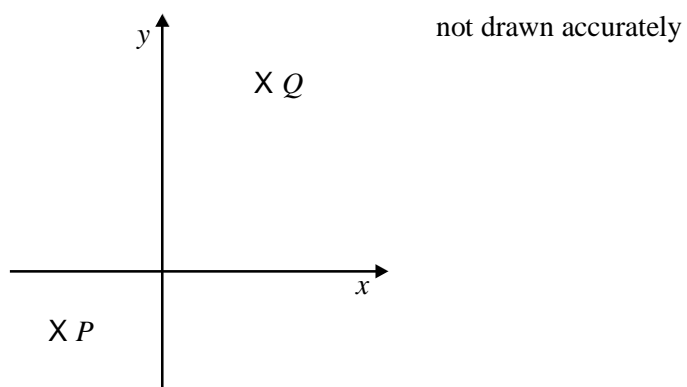


Trigonometry and Pythagoras Revision (Including 3D Pythagoras)

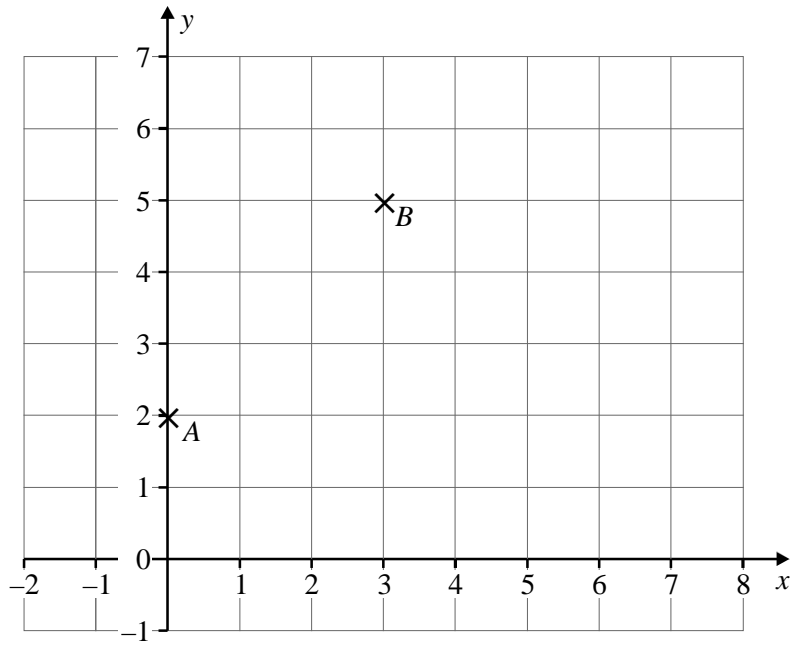
1. The sketch below shows the points $P(-3, -2)$ and $Q(5, 13)$.



Calculate the length of PQ .

(Total 3 marks)

2.

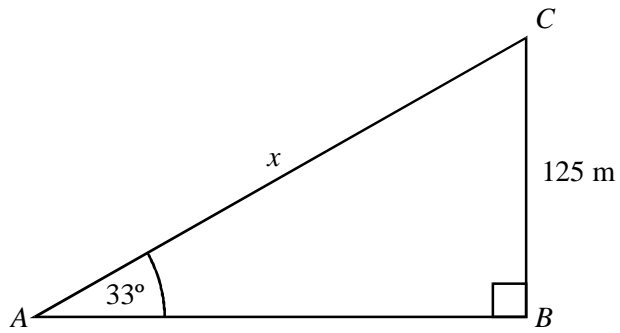


A is the point $(0,2)$ and B is the point $(3,5)$.

Find the **exact** length of AB .

(Total 2 marks)

3. ABC is a right-angled triangle.
 $BC = 125$ m.
Angle $CAB = 33^\circ$

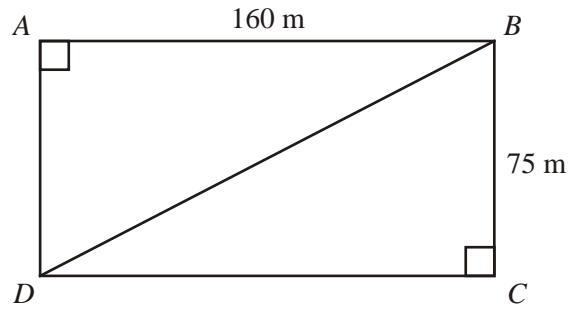


Not drawn accurately

Find the length of AC (marked x in the diagram).
Give your answer to an appropriate degree of accuracy.

(Total 4 marks)

4. A rectangular field $ABCD$ is shown.
The length of the field, $AB = 160$ m.
The width of the field, $BC = 75$ m.



Not to scale

- (a) Calculate the length of the diagonal BD .

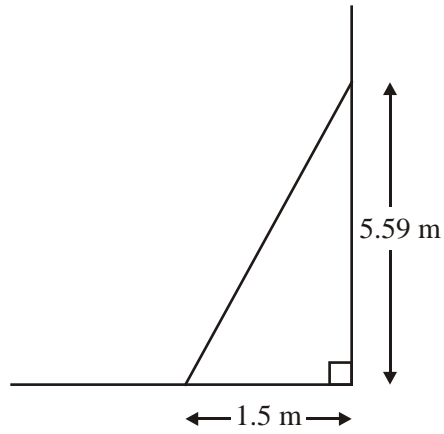
(4)

- (b) Calculate the size of angle ADB .

(3)
(Total 7 marks)

5. For a ladder to be safe it must be inclined at between 70° and 80° to the ground.

(a) The diagram shows a ladder resting against a wall.

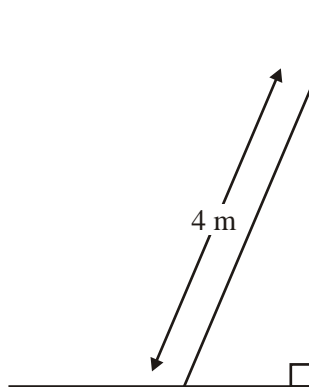


Is it safe?

You **must** show your working.

(3)

(b) Another ladder rests against a wall.



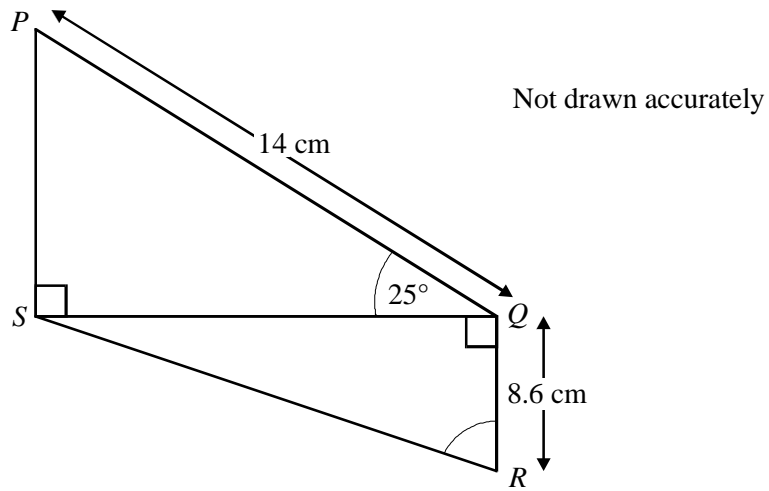
Work out the closest distance that the bottom of the ladder can be from the wall so that it is safe.

(3)
(Total 6 marks)

6. In the diagram, $PQ = 14$ cm and $QR = 8.6$ cm.

Angle $PSQ = \text{angle } SQR = 90^\circ$

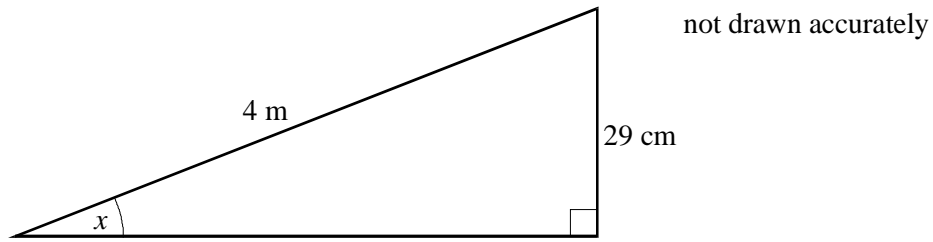
Angle $PQS = 25^\circ$



Calculate angle R .

(Total 5 marks)

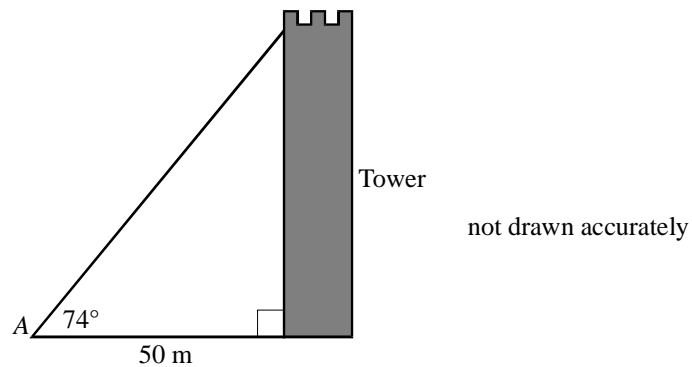
7. (a) A ramp is 4 metres long and 29 centimetres high.
If the ramp is safe for wheelchair users the angle marked x must be 4° or less.



Is this ramp safe for wheelchair users?
You **must** show your working

(4)

- (b) The point A is 50 metres from the base of a tower.
The angle of elevation of the top of the tower from A is 74° .



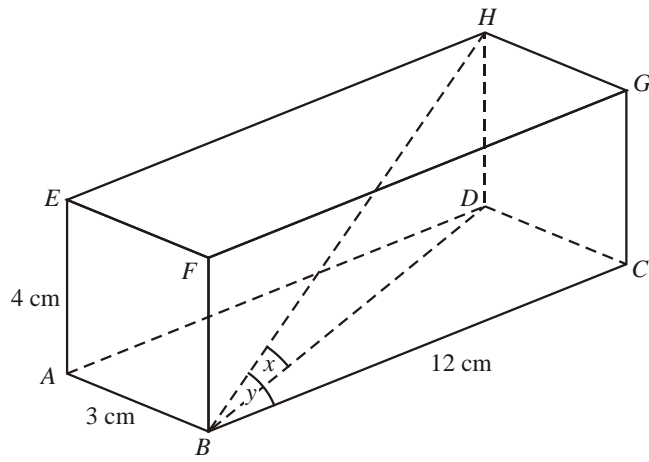
- (i) Calculate the height of the tower.
Give your answer to a suitable degree of accuracy.

(4)

- (ii) What is the angle of depression of the point A from the top of the tower?

(1)
(Total 9 marks)

8. The diagram shows a cuboid.
 $AB = 3$ cm, $AE = 4$ cm, $BC = 12$ cm.

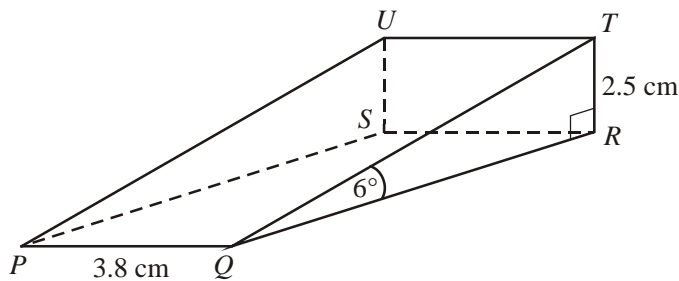


Not drawn accurately

Find the length of BH .

(Total 2 marks)

9. The diagram shows a door-wedge with a rectangular horizontal base $PQRS$.
 The sloping face $PQTU$ is also rectangular.
 $PQ = 3.8$ cm and angle $TQR = 6^\circ$
 The height TR is 2.5 cm.



Not drawn accurately

Calculate the length of the diagonal PT .

(Total 5 marks)