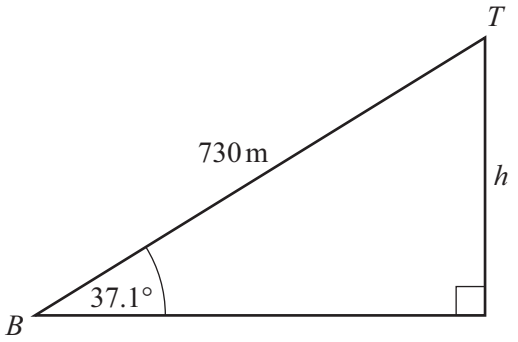
1. The diagram represents the ski lift in Queenstown New Zealand.



NOT TO SCALE

(a) The length of the cable from the bottom, *B*, to the top, *T*, is 730 metres.

The angle of elevation of *T* from *B* is 37.1°.

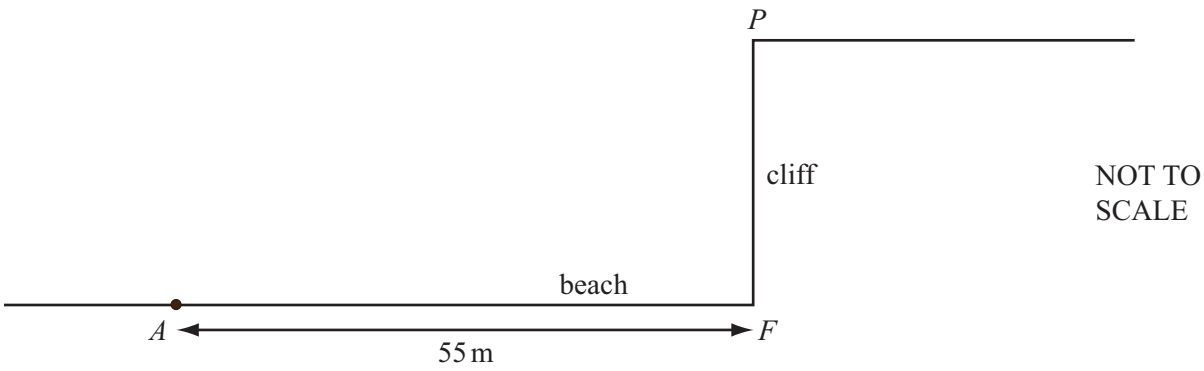
Calculate the change in altitude, *h* metres, from the bottom to the top. [2]

(b) The lift travels along the cable at 3.65 metres per second.

Calculate how long it takes to travel from *B* to *T*.

Give your answer in minutes and seconds. [2]

2.

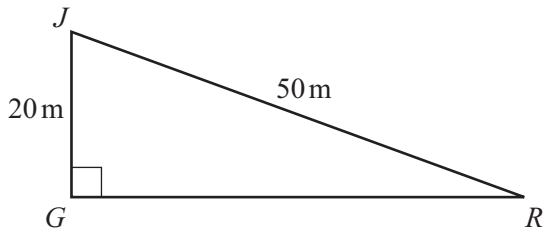


NOT TO SCALE

The diagram shows a point *P* at the top of a cliff.
The point *F* is on the beach and vertically below *P*.
The point *A* is 55m from *F*, along the horizontal beach.
The angle of elevation of *P* from *A* is 17°.

Calculate *PF*, the height of the cliff. *Answer PF =* m [3]

3.

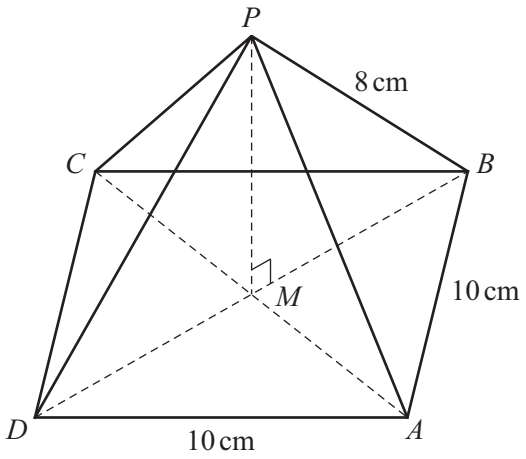


NOT TO SCALE

JGR is a right-angled triangle. *JR* = 50m and *JG* = 20m.
Calculate angle *JRG*.

Answer Angle *JRG* = [2]

4.



NOT TO SCALE

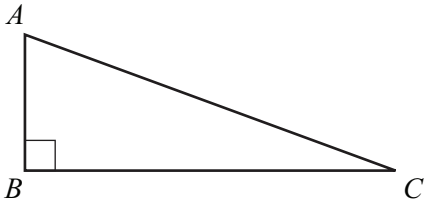
The diagram represents a pyramid with a square base of side 10 cm.

The diagonals *AC* and *BD* meet at *M*. *P* is vertically above *M* and *PB* = 8cm.

(a) Calculate the length of *BD*. [2]

(b) Calculate *MP*, the height of the pyramid. [3]

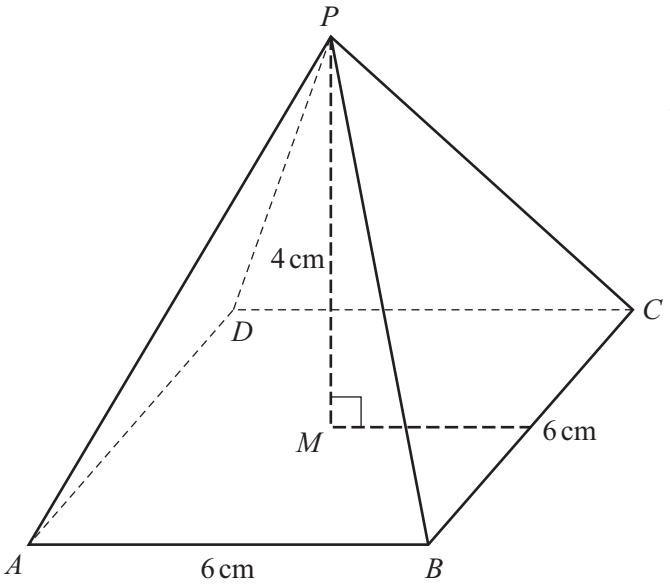
5. In the right-angled triangle *ABC*, $\cos C = \frac{4}{5}$. Find angle *A*.



NOT TO SCALE

Answer Angle *A* = [2]

6.



NOT TO SCALE

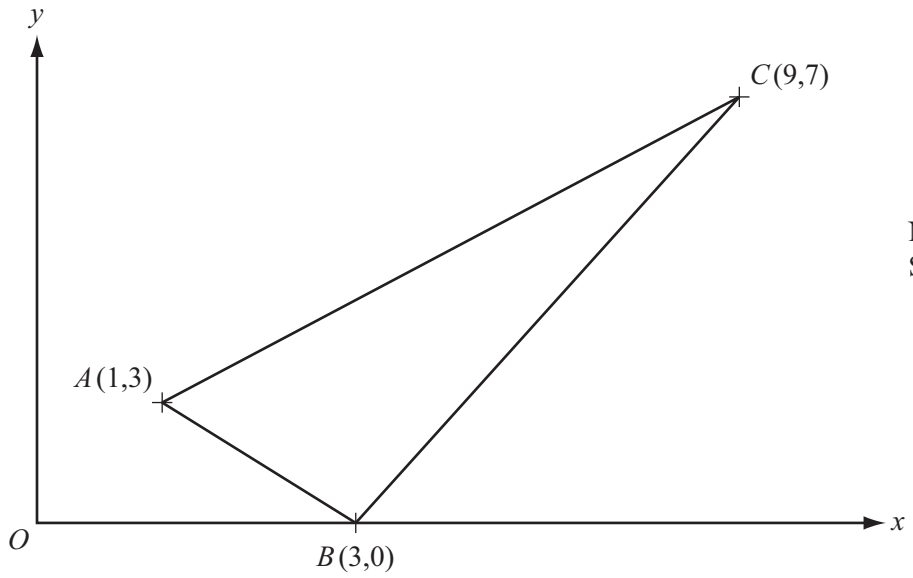
The diagram shows a pyramid with a square base $ABCD$ of side 6 cm.

The height of the pyramid, PM, is 4 cm, where M is the centre of the base.

Calculate the total surface area of the pyramid.

[5]

7.



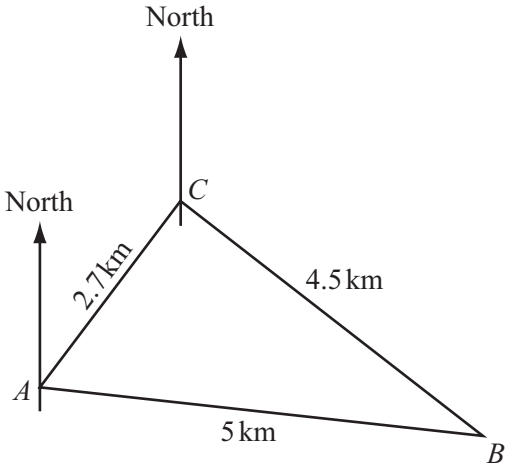
NOT TO SCALE

The co-ordinates of A, B and C are shown on the diagram, which is not to scale.

(a) Find the length of the line AB.

[3]

8.



NOT TO SCALE

The diagram shows 3 ships A, B and C at sea.

$AB = 5$ km, $BC = 4.5$ km and $AC = 2.7$ km.

(a) Calculate angle ACB.
Show all your working.

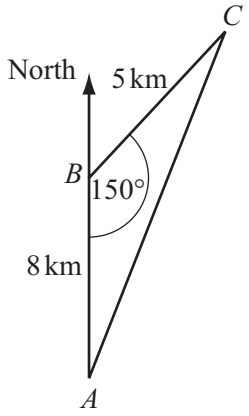
[4]

(b) The bearing of A from C is 220°.

Calculate the bearing of B from C.

[1]

9.



NOT TO SCALE

A helicopter flies 8 km due north from A to B. It then flies 5 km from B to C and returns to A.
Angle $ABC = 150°$.

(a) Calculate the area of triangle ABC. [2]

(b) Find the bearing of B from C. [2]