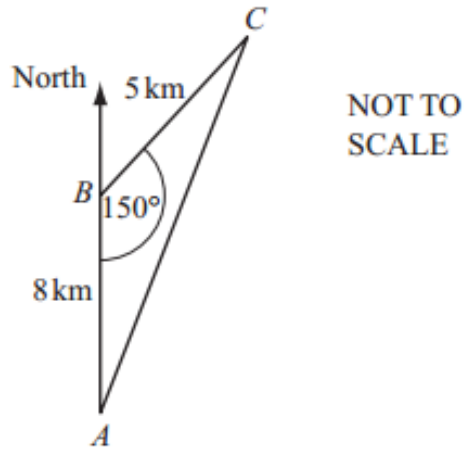


Mathematics

Grade 10 Easter Break Trigonometry

**Question 1**



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  $ABC = 150^\circ$ .

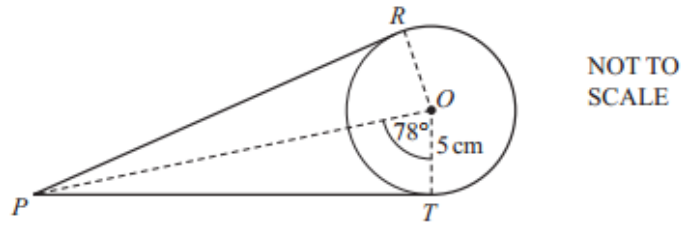
**(a)** Calculate the area of triangle  $ABC$ .

*Answer(a)* .....  $\text{km}^2$  [2]

**(b)** Find the bearing of  $B$  from  $C$ .

*Answer(b)* ..... [2]

2.



$R$  and  $T$  are points on a circle, centre  $O$ , with radius 5 cm.  
 $PR$  and  $PT$  are tangents to the circle and angle  $POT = 78^\circ$ .

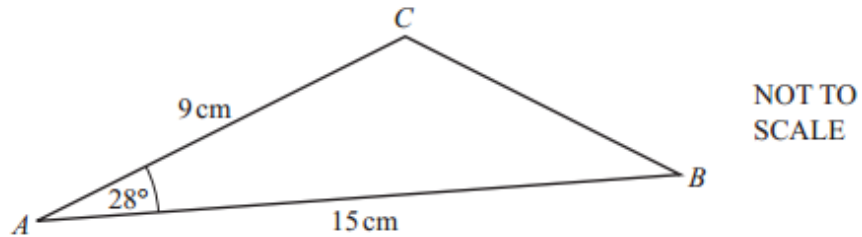
A thin rope goes from  $P$  to  $R$ , around the major arc  $RT$  and then from  $T$  to  $P$ .

Calculate the length of the rope.

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Answer ..... cm [6]

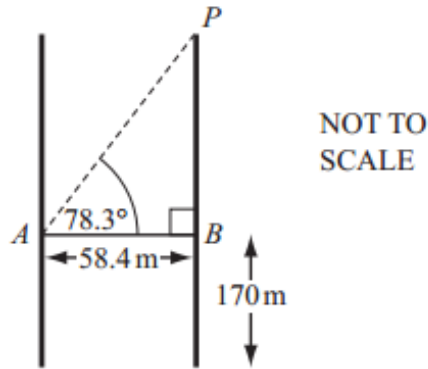
3.



Calculate the area of triangle  $ABC$ .

Answer .....  $\text{cm}^2$  [2]

4.



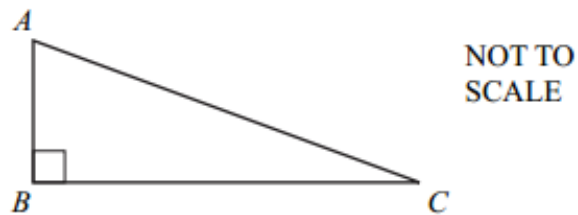
The line  $AB$  represents the glass walkway between the Petronas Towers in Kuala Lumpur. The walkway is  $58.4$  metres long and is  $170$  metres above the ground. The angle of elevation of the point  $P$  from  $A$  is  $78.3^\circ$ .

Calculate the height of  $P$  above the ground.

Answer ..... m [3]

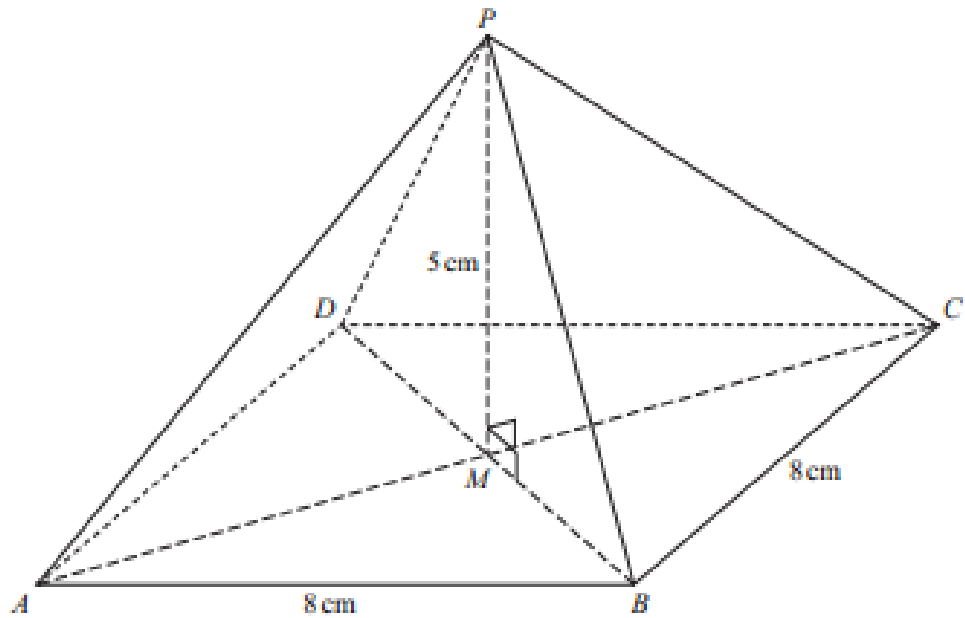
5.

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



Answer Angle  $A =$  ..... [2]

6.



NOT TO  
SCALE

The diagram shows a pyramid on a square base  $ABCD$ .  
The diagonals of the base,  $AC$  and  $BD$ , intersect at  $M$ .  
The sides of the square are 8 cm and the vertical height of the pyramid,  $PM$ , is 5 cm.

Calculate

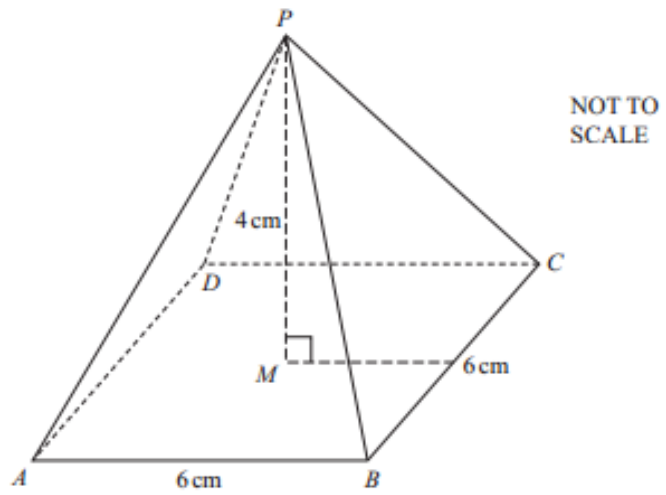
(a) the length of the edge  $PB$ ,

Answer(a)  $PB =$  ..... cm [3]

(b) the angle between  $PB$  and the base  $ABCD$ .

Answer(b) ..... [3]

7.



The diagram shows a pyramid with a square base  $ABCD$  of side  $6\text{ cm}$ .

The height of the pyramid,  $PM$ , is  $4\text{ cm}$ , where  $M$  is the centre of the base.

Calculate the total surface area of the pyramid.

Answer .....  $\text{cm}^2$  [5]