

# TRIGONOMETRY (Q 5, PAPER 2)

2001

- 5 (a)  $\sin \theta = \frac{3}{5}$  where  $0^\circ < \theta < 90^\circ$ .

Find, without using the Tables or a calculator, the value of

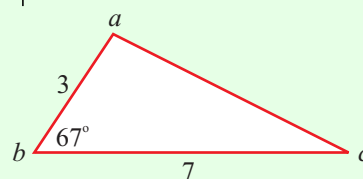
(i)  $\cos \theta$

(ii)  $\cos 2\theta$ . [Note:  $\cos 2\theta = \cos^2 \theta - \sin^2 \theta$ .]

- (b) In the triangle  $abc$ ,  $|ab| = 3$  units,  $|bc| = 7$  units and  $|\angle abc| = 67^\circ$ .

- (i) Calculate the area of the triangle  $abc$ , correct to one decimal place.

- (ii) Calculate  $|ac|$ , correct to the nearest whole number.



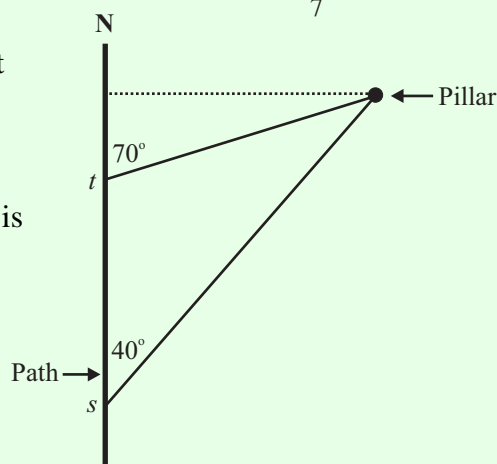
- (c)  $s$  and  $t$  are two points 300 m apart on a straight path due north.

From  $s$  the bearing of a pillar is  $N40^\circ E$ .

From  $t$  the bearing of the pillar is  $N70^\circ E$ .

- (i) Show that the distance from  $t$  to the pillar is 386 m, correct to the nearest metre.

- (ii) Find the shortest distance from the path to the pillar, correct to the nearest metre.



## ANSWERS

- 5 (a) (i)  $\frac{4}{5}$  (ii)  $\frac{7}{25}$   
 (b) (i)  $9.7 \text{ units}^2$  (ii) 6 units  
 (c) (ii) 363 m