

# Sine & Cosine Rules

## Difficulty: Hard

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Trigonometry
Sub-Topic	Sine & Cosine Rules
Paper	Paper 2
Difficulty	Hard
Booklet	Question Paper 1

**Time allowed:** 36 minutes

**Score:** /28

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

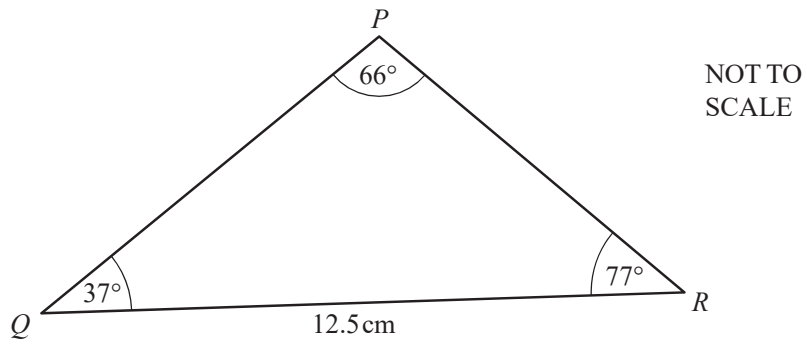
## Question 1

A triangle has sides of length 2 cm, 8 cm and 9 cm.

Calculate the value of the largest angle in this triangle.

[4]

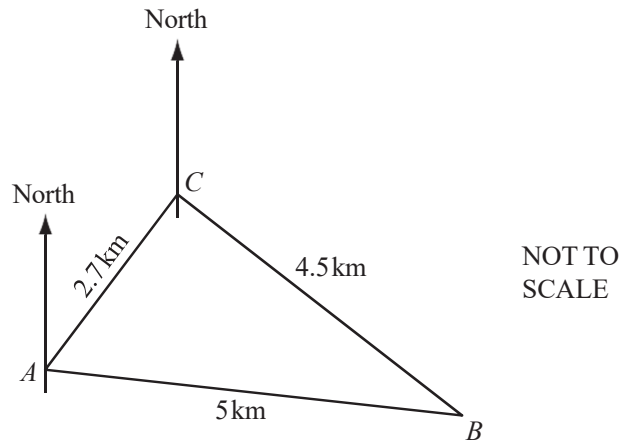
## Question 2



Calculate  $PR$ .

[3]

### Question 3



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.

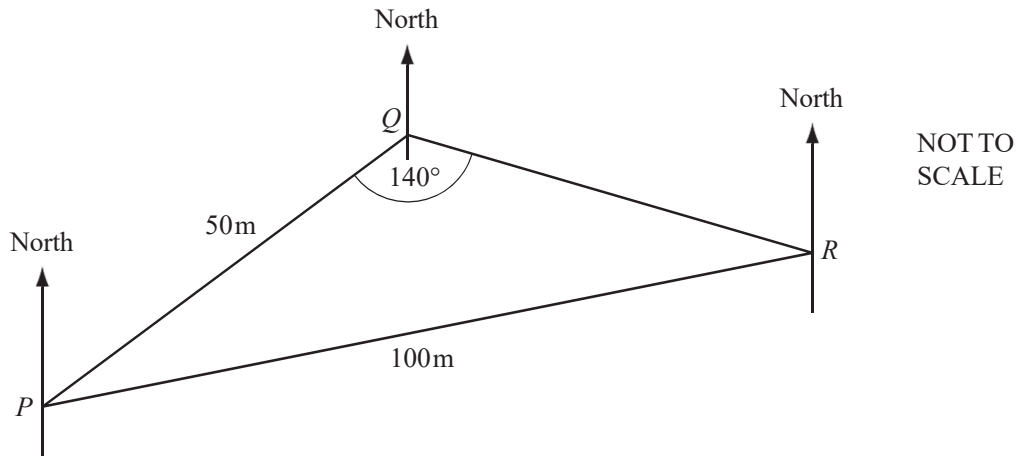
[4]

- (b) The bearing of  $A$  from  $C$  is  $220^\circ$ .

Calculate the bearing of  $B$  from  $C$ .

[1]

## Question 4



The diagram shows three points  $P$ ,  $Q$  and  $R$  on horizontal ground.

$PQ = 50\text{ m}$ ,  $PR = 100\text{ m}$  and angle  $PQR = 140^\circ$ .

(a) Calculate angle  $PRQ$ .

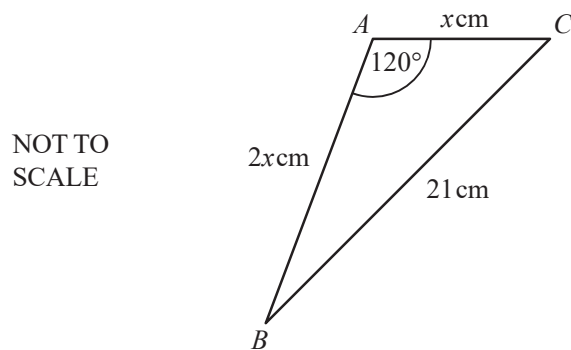
[3]

(b) The bearing of  $R$  from  $Q$  is  $100^\circ$ .

Find the bearing of  $P$  from  $R$ .

[2]

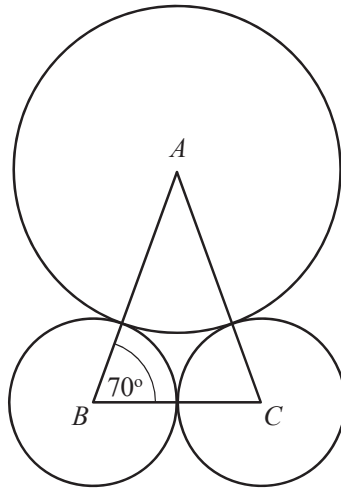
## Question 5



In triangle  $ABC$ ,  $AB = 2x \text{ cm}$ ,  $AC = x \text{ cm}$ ,  $BC = 21 \text{ cm}$  and angle  $BAC = 120^\circ$ .  
Calculate the value of  $x$ .

[3]

## Question 6



NOT TO  
SCALE

The diagram shows three touching circles.

$A$  is the centre of a circle of radius  $x$  centimetres.

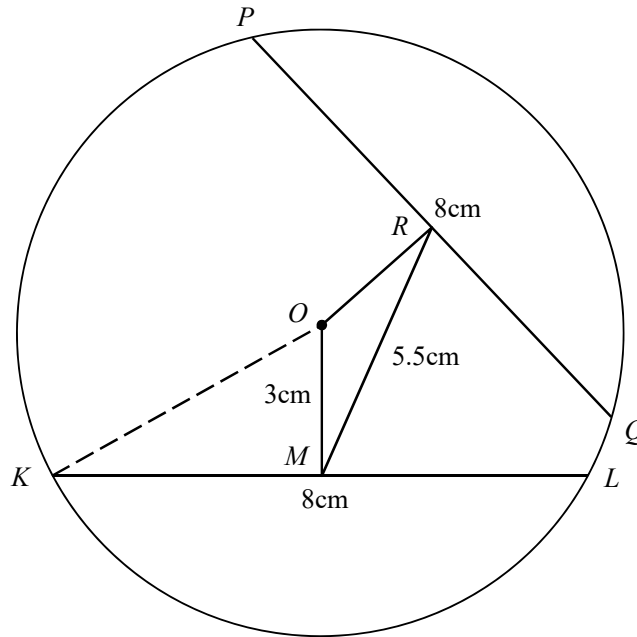
$B$  and  $C$  are the centres of circles of radius 3.8 centimetres. Angle  $ABC = 70^\circ$ .

Find the value of  $x$ .

[3]

## Question 7

NOT TO  
SCALE



In the circle, centre  $O$ , the chords  $KL$  and  $PQ$  are each of length 8 cm.  
 $M$  is the mid-point of  $KL$  and  $R$  is the mid-point of  $PQ$ .  $OM = 3$  cm.

(a) Calculate the length of  $OK$ .

[2]

(b)  $RM$  has a length of 5.5 cm. Calculate angle  $ROM$ .

[3]