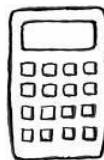


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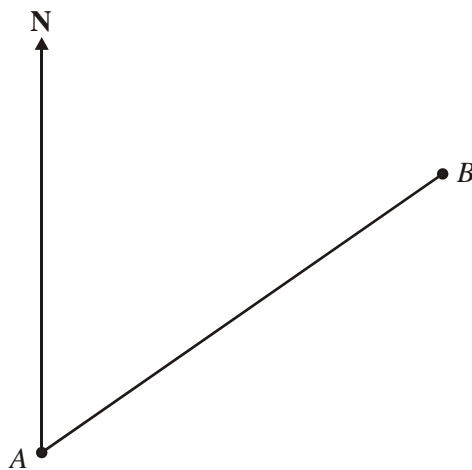
Teacher Assessment



Section A **Bearings** **Grade C**

1. The diagram shows a scale drawing of two points, *A* and *B*, on an orienteering course.

Scale: 1 cm represents 50 m



(a) Use the diagram to work out the actual distance from *A* to *B*.

.....
.....

Answer metres

(2)

(b) Measure and write down the three-figure bearing of *B* from *A*.

Answer degrees

(1)

(c) The bearing of point *C* from *A* is 300° . What is the three-figure bearing of *A* from *C*?

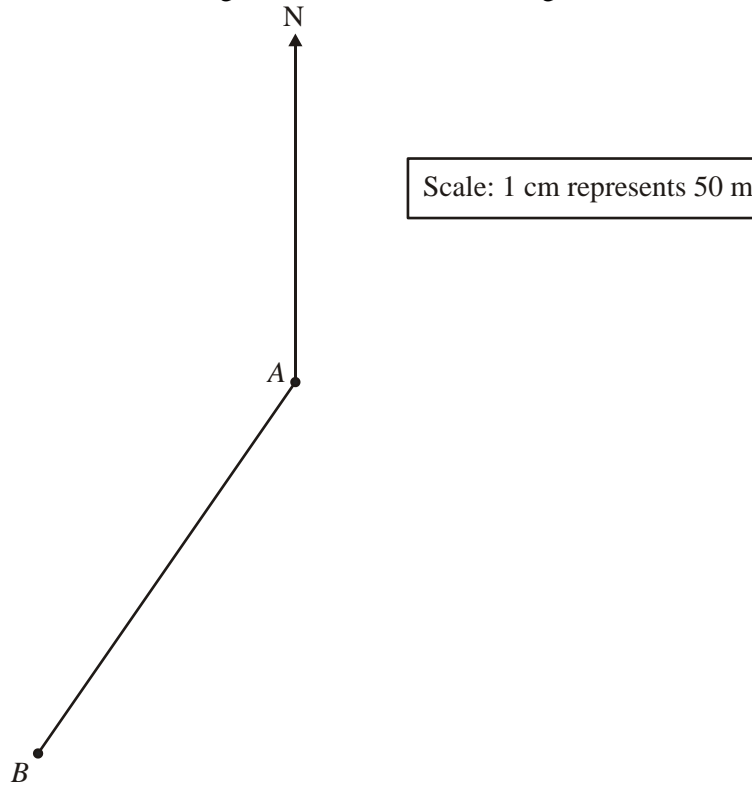
.....
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Answerdegrees

(2)

(Total 5 marks)

2. The diagram shows a scale drawing of one side, AB , of a triangular field, ABC .



- (a) Use the diagram to calculate the actual distance from A to B .

.....
.....

Answermetres

(2)

- (b) Measure and write down the three figure bearing of B from A .

Answer°

(1)

- (c) The bearing of C from A is 130° .
The actual distance from A to C is 350 metres.
Mark the point C on the diagram.

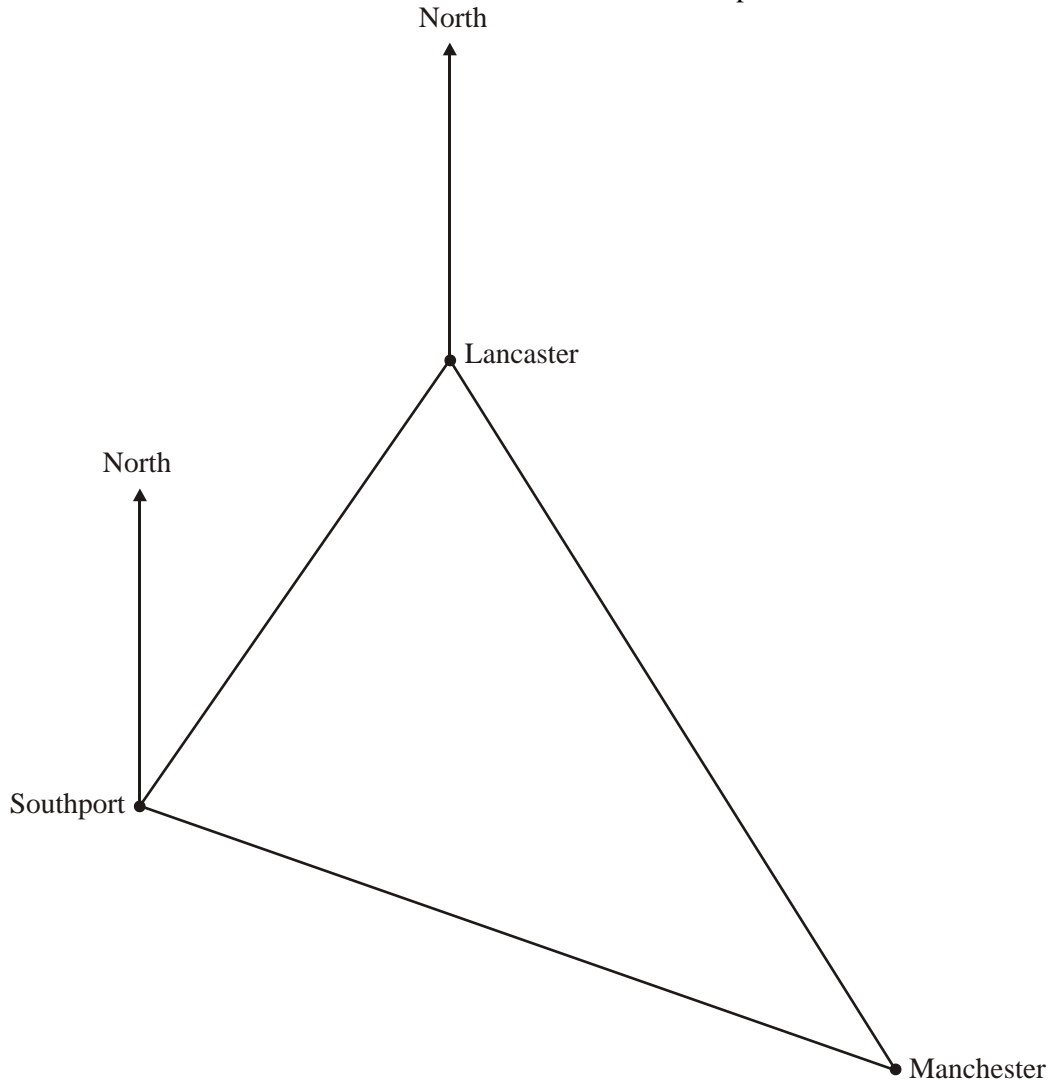
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(2)

(Total 5 marks)

3. The map shows the positions of three places.

Scale: 1cm represents 4 miles



(i) What is the bearing of Lancaster from Southport?

.....

Answer degrees

(1)

(ii) What is the bearing of Manchester from Lancaster?

.....

Answer degrees

(1)

(iii) Work out the distance in miles from Manchester to Southport.

.....

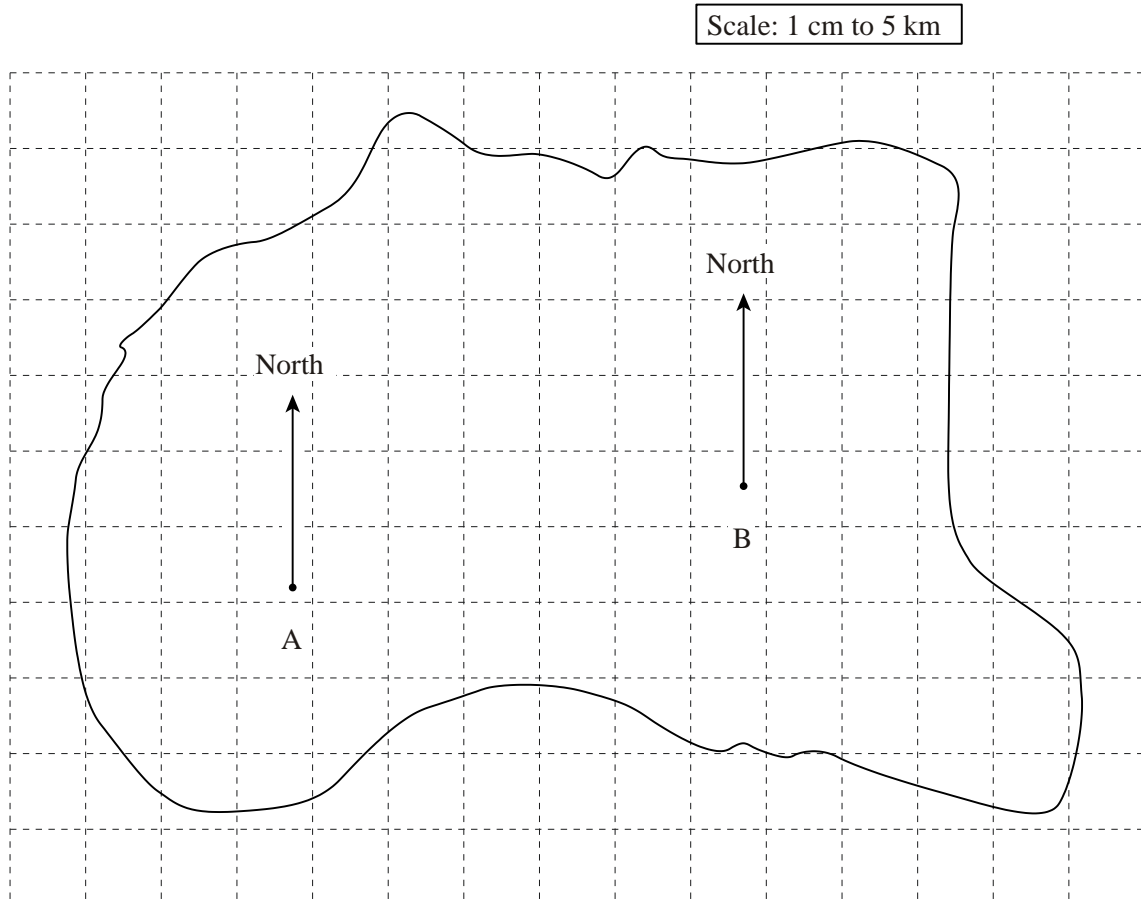
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Answer miles

(3) (Total 5 marks)

4. The diagram shows an island with North lines drawn at points A and B.



- (a) Treasure is buried on a bearing of 037° from A and 290° from B.
Mark, with a \times , the position of the treasure.

(3)

- (b) Find the real distance between the points A and B.

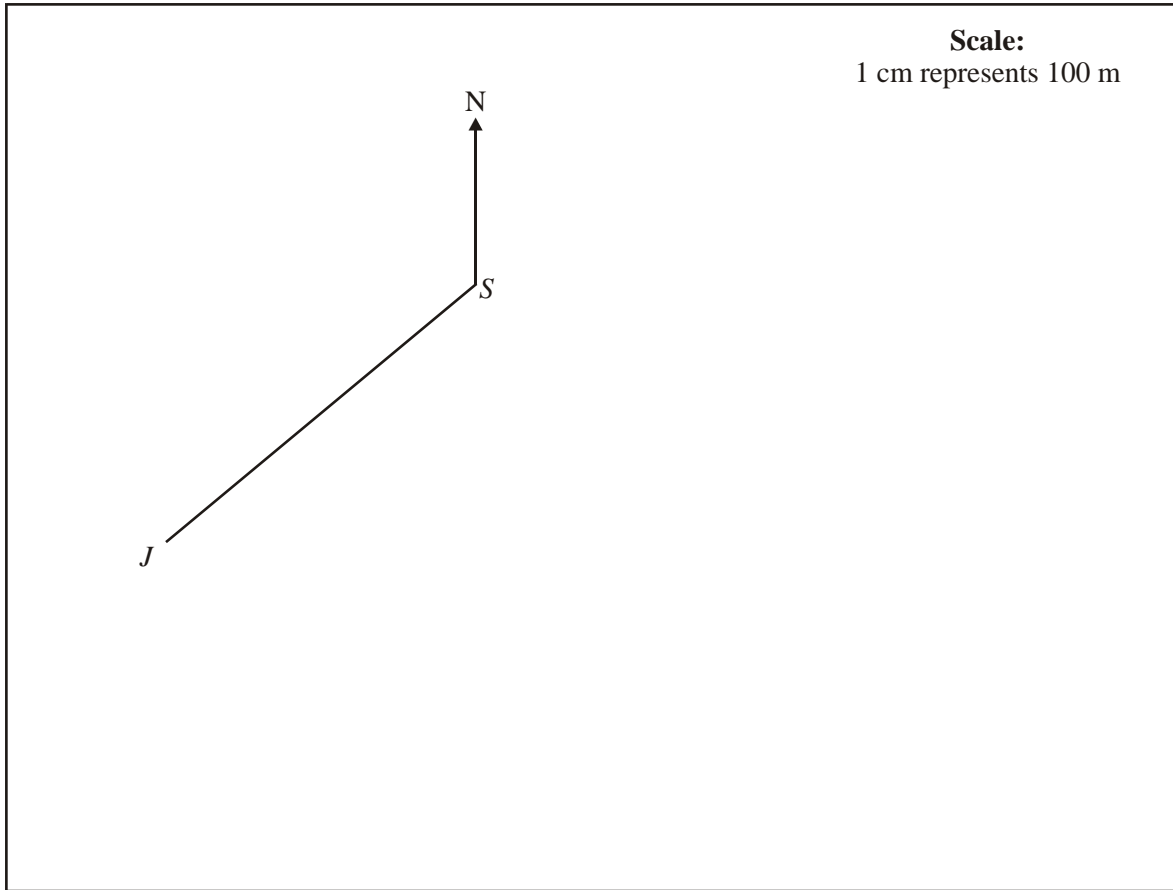
.....

Answer km

(3)

(Total 6 marks)

5. The diagram shows the positions of Joe's house, J , and the local shop, S .
The diagram is drawn to scale.
1 cm represents 100 m.



- (a) Use the diagram to calculate the actual distance from Joe's house to the shop.

.....
.....

Answer metres

(2)

- (b) Measure and write down the three figure bearing of Joe's house from the shop.

.....

Answer°

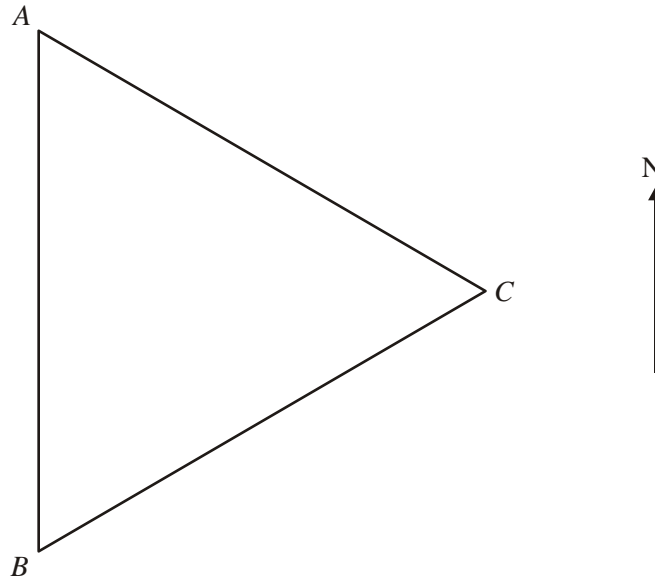
(1)

- (c) Kate's house, K , is 450 metres from the shop on a bearing of 120° .
Mark the position of K on the diagram.

(2)

(Total 5 marks)

6. (a) *A, B* and *C* are three towns which form an equilateral triangle as shown.



Use the given bearings to complete the sentences.

060° 120° 180° 240° 300°

- (i) *C* is on a bearing offrom *A*. (1)

- (ii) *B* is on a bearing offrom *C*. (1)

- (b) *D, E* and *F* are three towns.
E and *F* are shown on the diagram.
D is on a bearing of 070° from *E*.
D is also on a bearing of 320° from *F*.

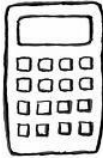
Complete the diagram to show accurately the position of *D*.



(2)(Total 4 marks)

Success:

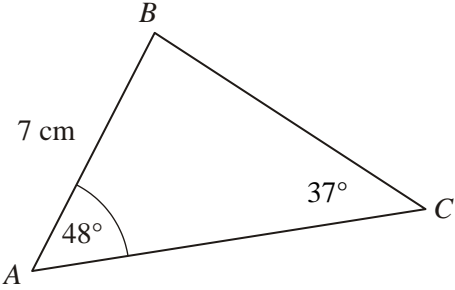
Target:



Section B **Sine Rule** **Grade A**

1. ABC is a triangle.

Not drawn accurately



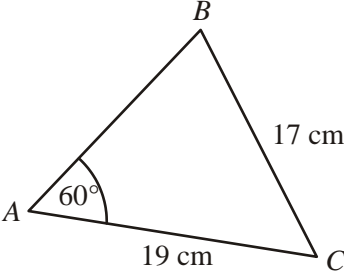
Find length BC.

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Answer cm
(Total 3 marks)

2. ABC is a triangle. $AC = 19$ cm, $BC = 17$ cm and angle $BAC = 60^\circ$

Not to scale



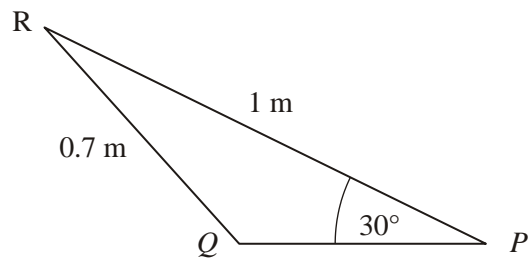
Calculate the size of angle ABC .

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Answer degrees
(Total 3 marks)

3. PQR is a triangle.
St Paul's Catholic School

$PR = 1 \text{ m}$ and $QR = 0.7 \text{ m}$
Angle $RPQ = 30^\circ$



Not drawn accurately

Find the size of the obtuse angle RQP .

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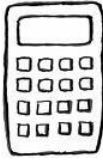
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Answer degrees
(Total 3 marks)

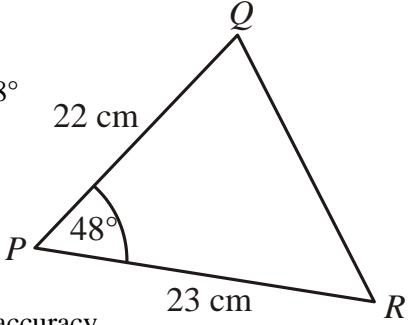
Success:

Target:



Section C **Cosine Rule** **Grade A**

1. PQR is a triangle.
 $PR = 23$ cm, $PQ = 22$ cm and angle $QPR = 48^\circ$



Not to scale

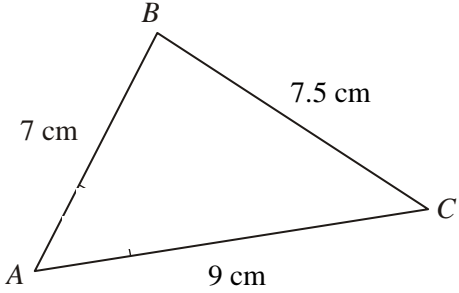
Calculate the length of QR .
Give your answer to an appropriate degree of accuracy.

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Answer cm
(Total 4 marks)

2. ABC is a triangle.

Not drawn accurately



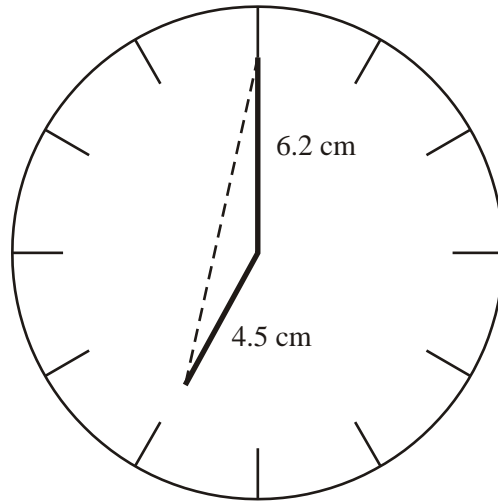
Calculate the size of angle BAC.

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Answer degrees
(Total 3 marks)

3. The hour hand of a clock is 4.5 cm long.

The minute hand is 6.2 cm long.



Not drawn accurately

Calculate the distance between the tips of the hands at 7 o'clock.

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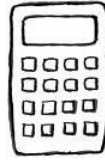
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Answer cm
(Total 4 marks)

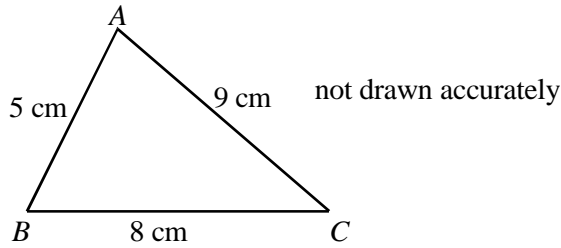
Success:

Target:



Section D **Problem Solving** **Grade A / A***

1. In triangle ABC , $AB = 5$ cm, $BC = 8$ cm and $AC = 9$ cm.



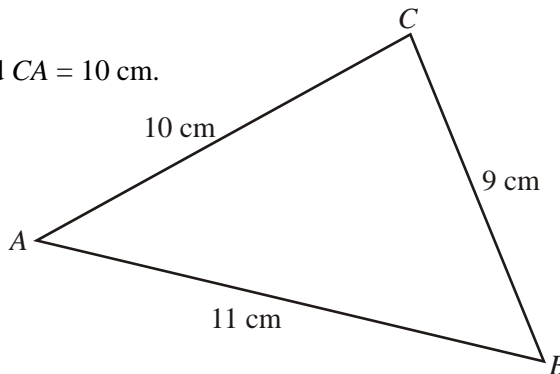
Use the cosine rule to show that triangle ABC does **not** contain an obtuse angle.

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(Total 3 marks)

2. In triangle ABC , $AB = 11$ cm, $BC = 9$ cm and $CA = 10$ cm.

Find the area of triangle ABC .



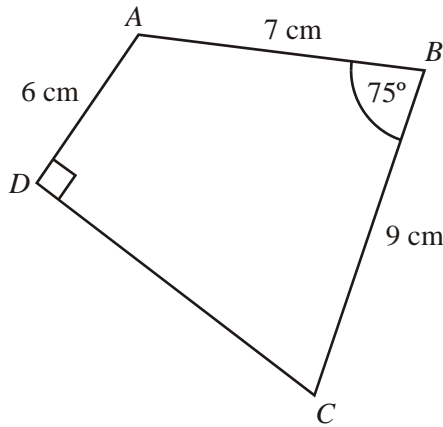
Not to scale

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Answer cm²

(Total 5 marks)

3. $ABCD$ is a quadrilateral.
 $AB = 7$ cm, $AD = 6$ cm and $BC = 9$ cm.
Angle $ABC = 75^\circ$ and angle $ADC = 90^\circ$



Not drawn accurately

Calculate the perimeter of $ABCD$.

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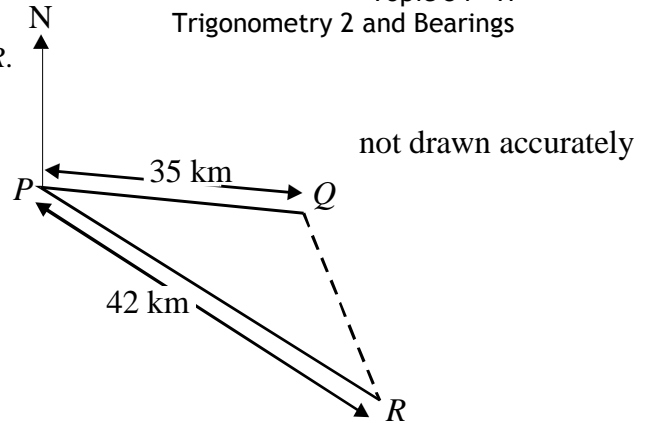
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Answer cm
(Total 5 marks)

4. The diagram shows the positions of three towns, P , Q and R .
 Q is 35 km from P on a bearing 100° .
 R is 42 km from P on a bearing 124° .



Calculate the distance from Q to R .

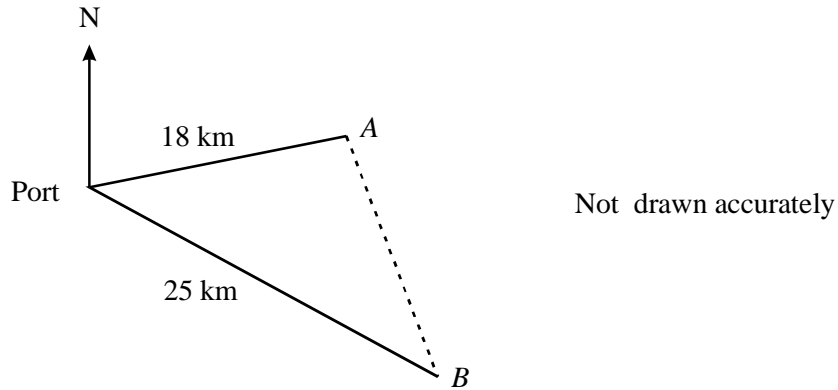
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Answer.....km
(Total 4 marks)

5. Two ships, A and B , leave port at 13 00 hours.
 Ship A travels at a constant speed of 18 km per hour on a bearing of 070° .
 Ship B travels at a constant speed of 25 km per hour on a bearing of 152° .



Calculate the distance between A and B at 14 00 hours.

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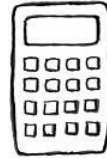
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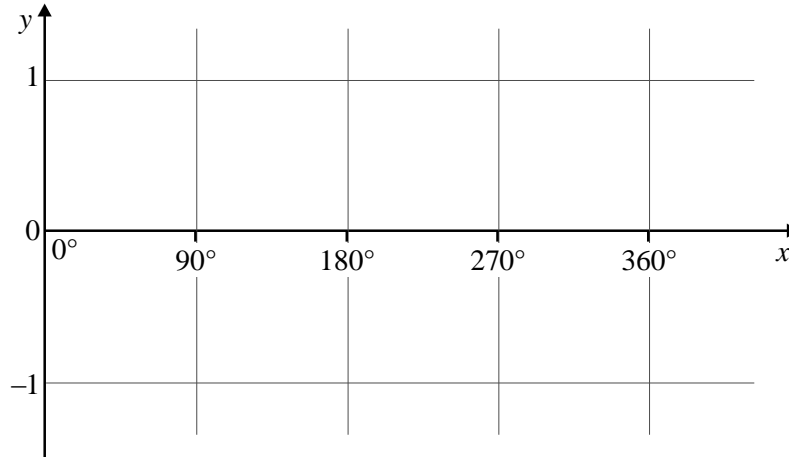
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Answer km
(Total 4 marks)



Section E Trigonometric Equations Using Graphs Grade A

1. (a) Sketch the graph of $y = \sin x$ for values of x from 0° to 360° .



(1)

- (b) One solution of the equation $\sin x = 0.92$ is $x = 67^\circ$.

Use your sketch graph to find another solution of this equation.

.....

Answer degrees

(2)

- (c) Use your sketch graph to work out the value of $\sin 293^\circ$.

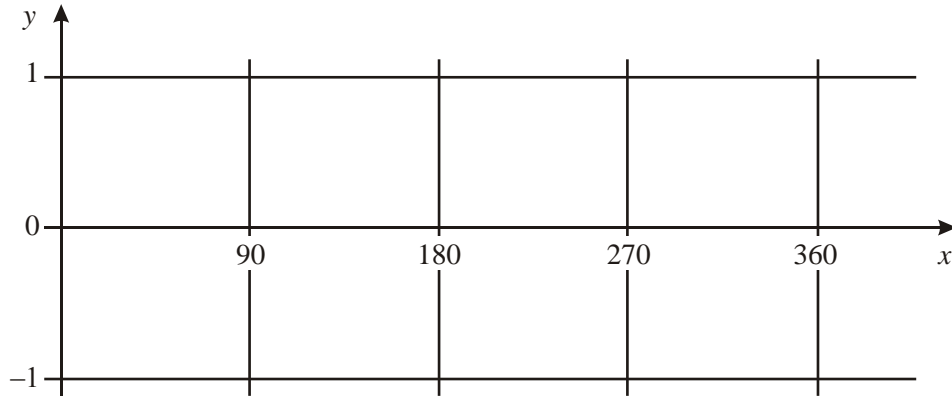
.....

Answer

(1)

(Total 4 marks)

2. (a) Sketch the graph of $y = \cos x$ for $0^\circ \leq x \leq 360^\circ$ on the axes below.



(1)

- (b) You are given that $\cos 27^\circ = 0.891$

- (i) Solve the equation $\cos x = 0.891$ for $180^\circ \leq x \leq 360^\circ$

.....

Answer $x =$ degrees

(1)

- (ii) Solve the equation $\cos x = -0.891$ for $0^\circ \leq x \leq 360^\circ$

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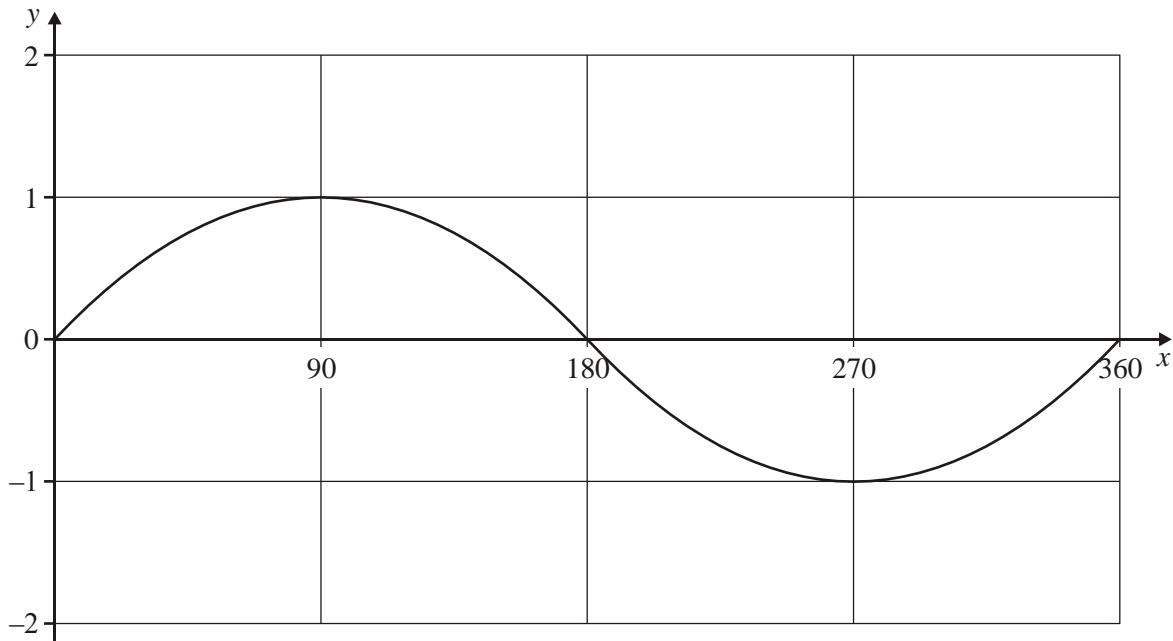
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Answer $x =$ degrees

(2)

(Total 4 marks)

3. The sketch shows the graph of $y = \sin x$ for $0^\circ \leq x \leq 360^\circ$



You are given that $\sin 70^\circ = 0.9397$

(a) Write down another solution of the equation $\sin x = 0.9397$

.....
.....

Answerdegrees

(1)

(b) Solve the equation $\sin x = -0.9397$ for $0^\circ \leq x \leq 360^\circ$

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.....
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Answer degrees

..... degrees

(2) (Total 3 marks)

Success:

Target: