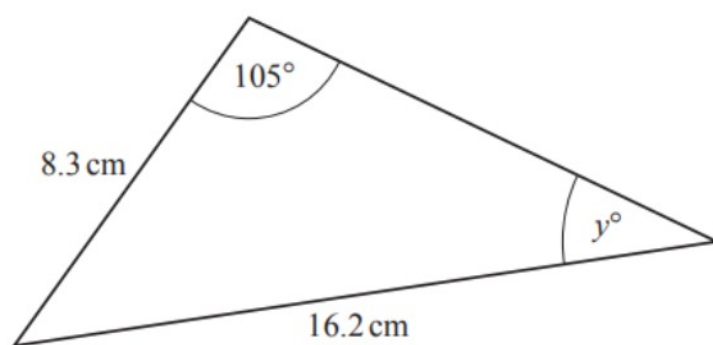


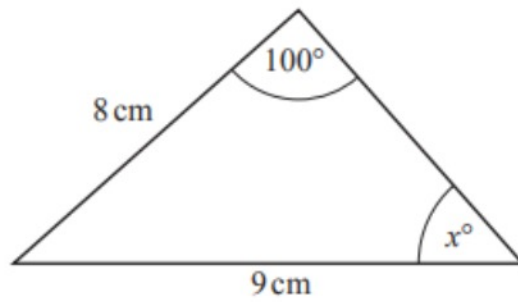
18



NOT TO
SCALE

Calculate the value of y .

$y = \dots\dots\dots$ [3]



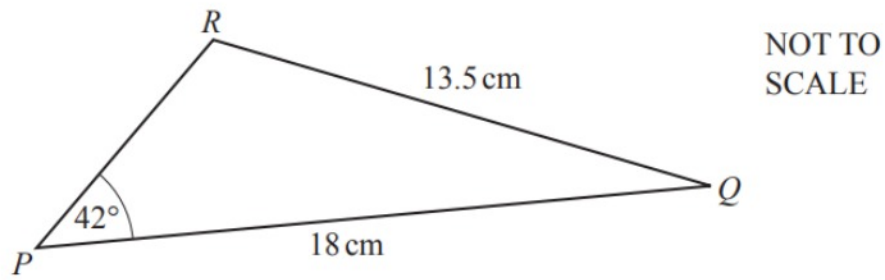
NOT TO
SCALE

- (a) Calculate the value of x .

$x = \dots\dots\dots$ [3]

- (b) Calculate the area of the triangle.

$\dots\dots\dots \text{ cm}^2$ [3]



Calculate the obtuse angle PRQ .

Angle $PRQ = \dots\dots\dots$ [4]

- 15 A triangle has sides of length 3 cm, 5 cm and 7 cm.

Work out the largest angle in the triangle.

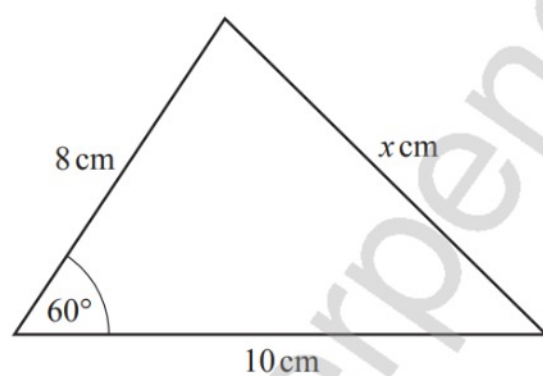
$\dots\dots\dots$ [3]

- 23 A triangle has sides of length 11 cm, 10 cm and 9 cm.

Calculate the largest angle in the triangle.

..... [4]

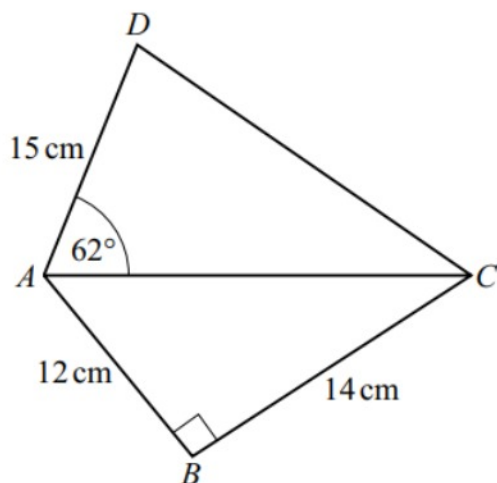
11



NOT TO
SCALE

Find the value of x^2 .

$x^2 =$ [3]



NOT TO
SCALE

The diagram shows a quadrilateral, $ABCD$, formed from two triangles, ABC and ACD . ABC is a right-angled triangle.

- (a) Calculate angle BAC .

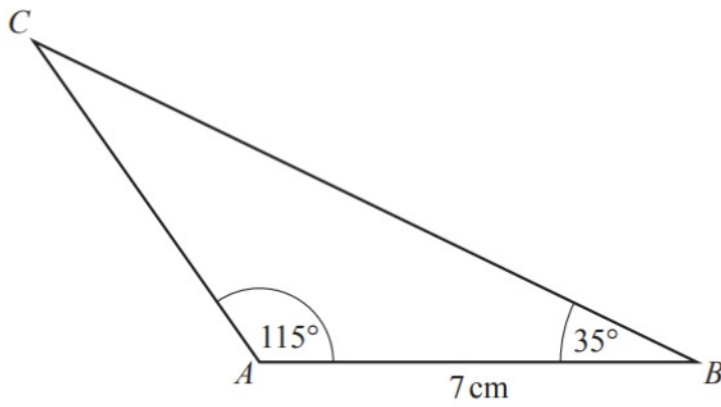
Angle $BAC = \dots\dots\dots$ [2]

- (b) Calculate BD .

$BD = \dots\dots\dots$ cm [4]

- (c) Calculate the shortest distance from D to AC .

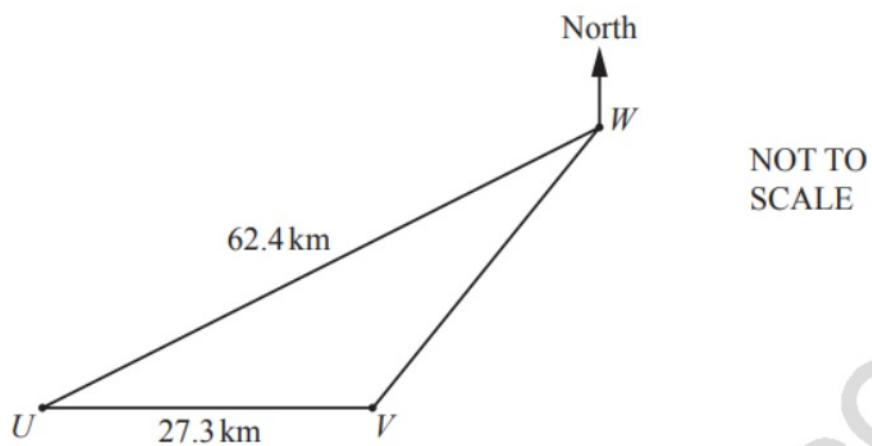
$\dots\dots\dots$ cm [3]



NOT TO
SCALE

Calculate the length BC .

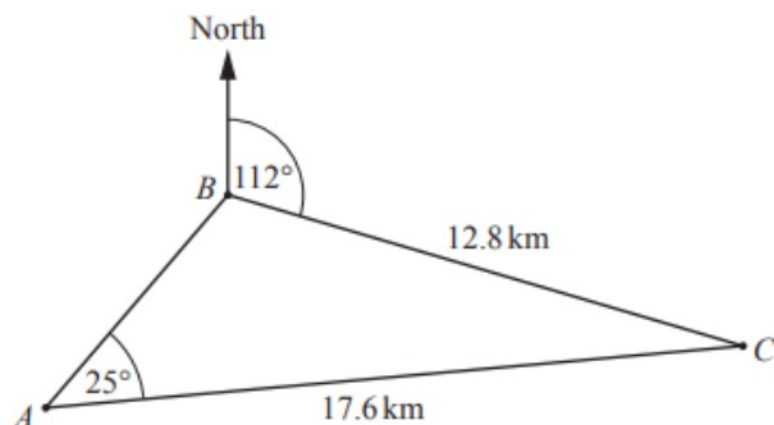
$BC = \dots\dots\dots\text{ cm}$ [4]



The diagram shows the position of three towns, U , V and W .
 U is due west of V and angle $UVW = 125^\circ$.

Calculate the bearing of U from W .

..... [4]



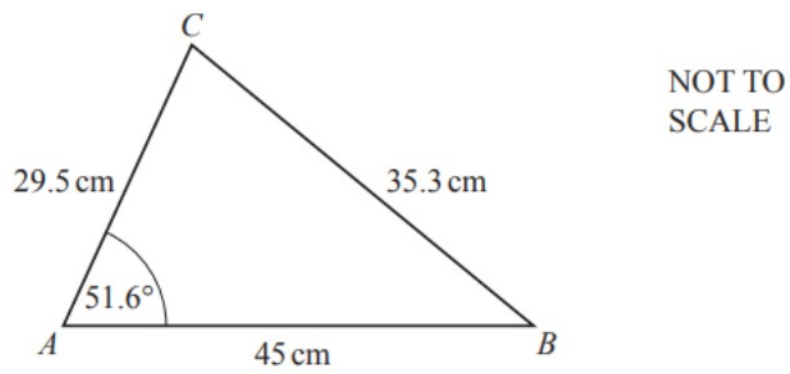
NOT TO
SCALE

The diagram shows the positions of three ships A , B and C .
 $AC = 17.6$ km, $BC = 12.8$ km and angle $BAC = 25^\circ$.
The bearing of C from B is 112° and angle ABC is obtuse.

Calculate the bearing of B from A .

..... [5]

4 (a)

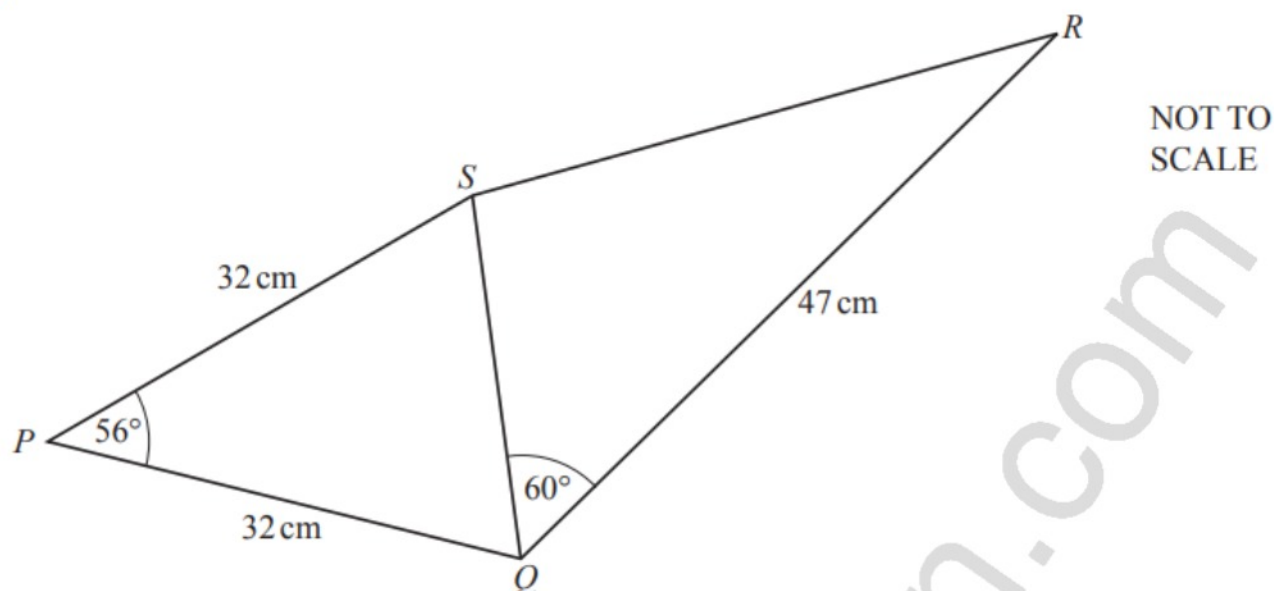


In triangle ABC , $AB = 45\text{ cm}$, $AC = 29.5\text{ cm}$, $BC = 35.3\text{ cm}$ and angle $CAB = 51.6^\circ$.

(i) Calculate angle ABC .

Angle $ABC = \dots\dots\dots$ [3]

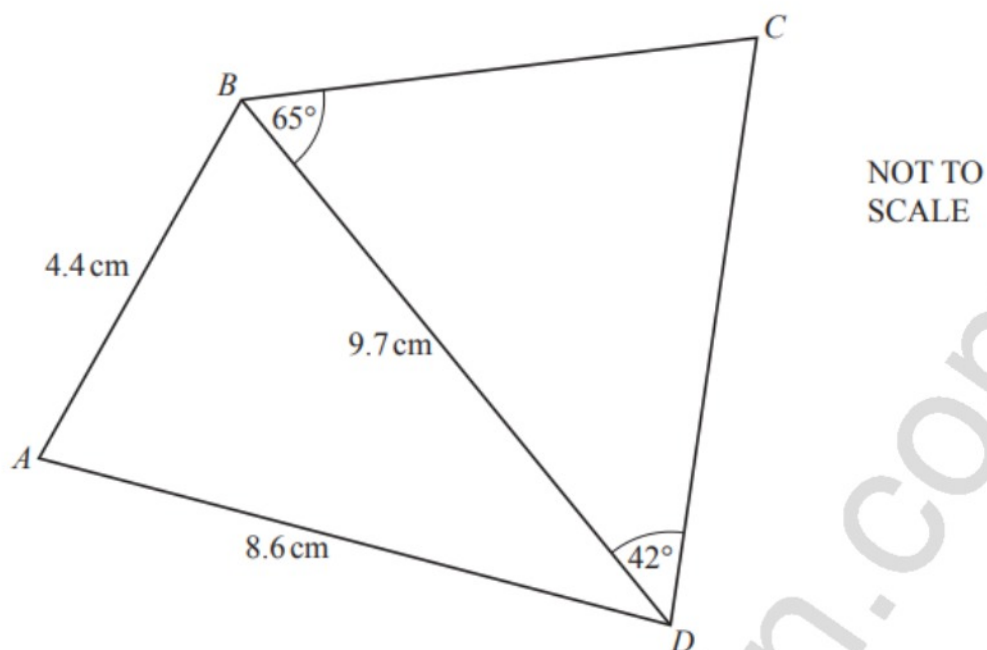
(b)



The diagram shows a quadrilateral $PQRS$ formed from two triangles, PQS and QRS . Triangle PQS is isosceles, with $PQ = PS = 32$ cm and angle $SPQ = 56^\circ$. $QR = 47$ cm and angle $SQR = 60^\circ$.

(i) Calculate SR .

$SR = \dots\dots\dots$ cm [4]



- (a) Calculate angle ADB .

Angle $ADB = \dots\dots\dots$ [3]

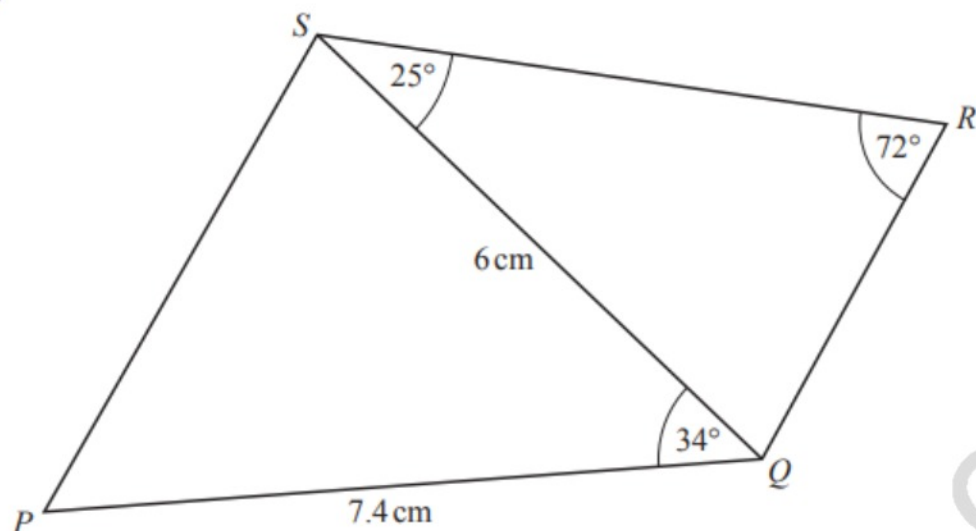
- (b) Calculate DC .

$DC = \dots\dots\dots \text{ cm}$ [4]

- (c) Calculate the shortest distance from C to BD .

$\dots\dots\dots \text{ cm}$ [3]

8 (a)



NOT TO
SCALE

The diagram shows a quadrilateral $PQRS$ formed from two triangles, PQS and QRS .

Calculate

(i) QR ,

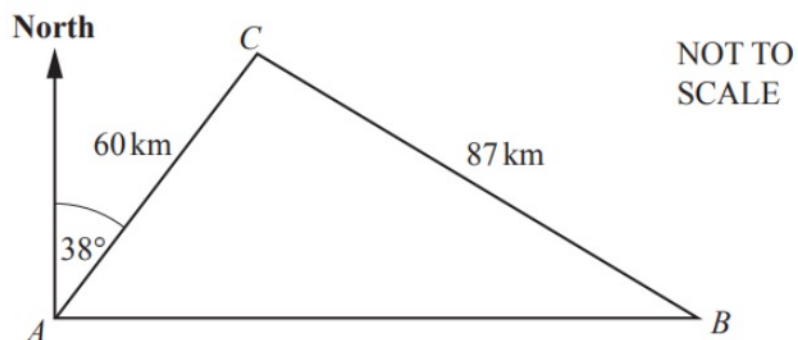
$QR = \dots\dots\dots$ cm [3]

(ii) PS ,

$PS = \dots\dots\dots$ cm [3]

(iii) the area of quadrilateral $PQRS$.

$\dots\dots\dots$ cm² [4]

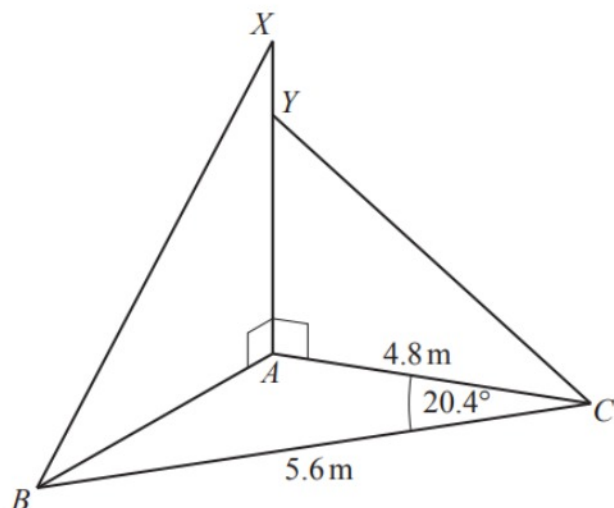


The diagram shows the straight roads between town A , town B and town C .
 $AC = 60$ km, $CB = 87$ km and B is due east of A .
The bearing of C from A is 038° .

- (a) Show that angle $ACB = 95.1^\circ$, correct to 1 decimal place.

[5]

5 (a)



NOT TO
SCALE

ABC is a scalene triangle on horizontal ground.
 AYX is a straight vertical post, held in place by two straight wires XB and YC .
 $AC = 4.8$ m, $BC = 5.6$ m and angle $ACB = 20.4^\circ$.

(i) Calculate AB .

$AB = \dots\dots\dots$ m [3]

(ii) Angle $XBA = 64^\circ$.

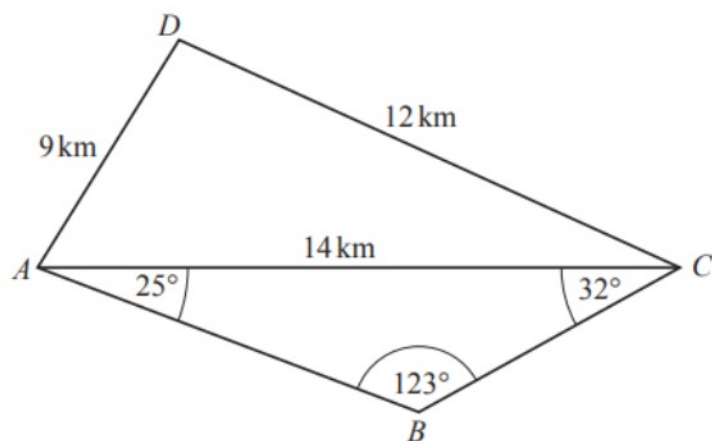
Calculate AX .

$AX = \dots\dots\dots$ m [2]

(iii) $AY = 2.9$ m.

Calculate the area of triangle YAC .

$\dots\dots\dots$ m² [2]



NOT TO
SCALE

- (a) Calculate angle ACD .

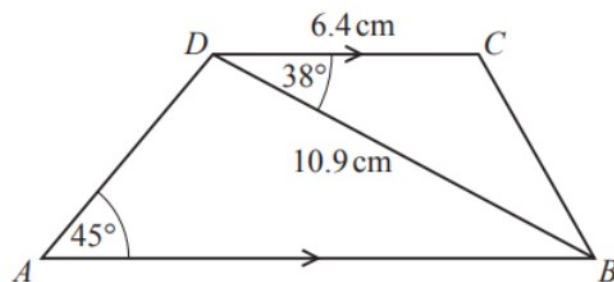
Angle $ACD = \dots\dots\dots$ [4]

- (b) Show that $BC = 7.05\text{ km}$, correct to 2 decimal places.

[3]

- (c) Calculate the shortest distance from B to AC .

$\dots\dots\dots$ km [3]



NOT TO
SCALE

$ABCD$ is a trapezium with DC parallel to AB .
 $DC = 6.4\text{ cm}$, $DB = 10.9\text{ cm}$, angle $CDB = 38^\circ$ and angle $DAB = 45^\circ$.

(a) Find CB .

$CB = \dots\dots\dots\text{ cm}$ [3]

(b) (i) Find angle ADB .

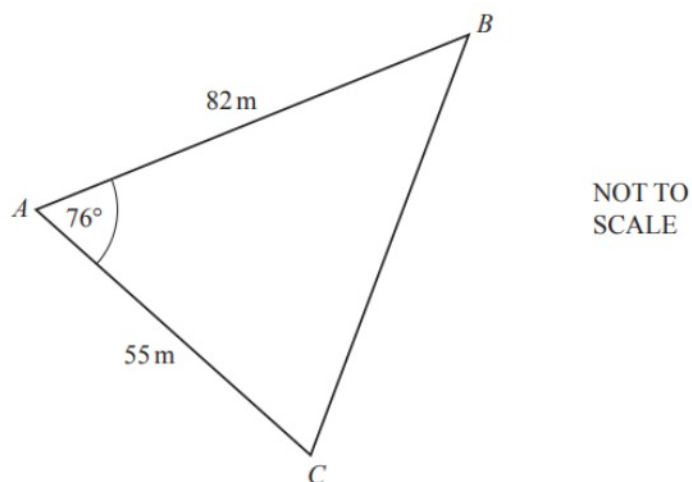
Angle $ADB = \dots\dots\dots$ [1]

(ii) Find AB .

$AB = \dots\dots\dots\text{ cm}$ [3]

(c) Calculate the area of the trapezium.

$\dots\dots\dots\text{ cm}^2$ [3]



The diagram shows a field ABC .

(a) Calculate BC .

$BC = \dots\dots\dots$ m [3]

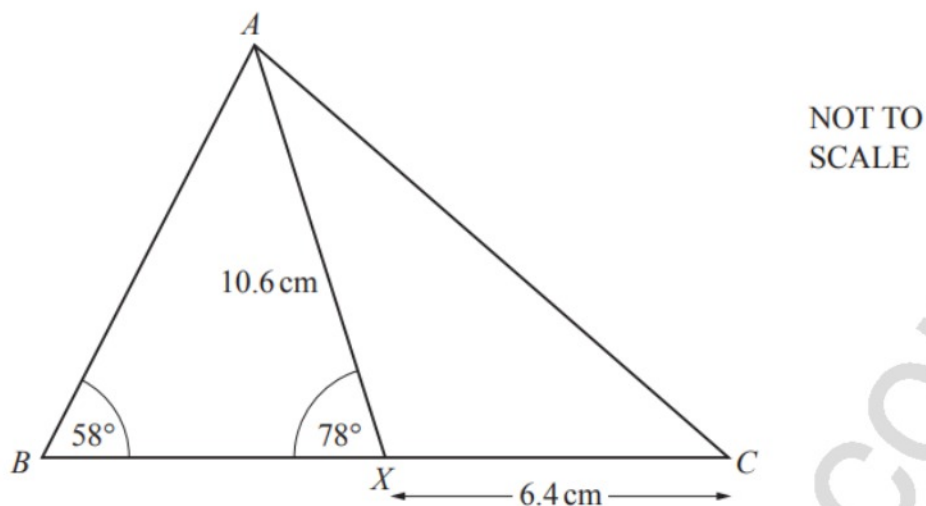
(b) Calculate angle ACB .

Angle $ACB = \dots\dots\dots$ [3]

(c) A gate, G , lies on AB at the shortest distance from C .

Calculate AG .

$AG = \dots\dots\dots$ m [3]



The diagram shows triangle ABC .

X is a point on BC .

$AX = 10.6\text{ cm}$, $XC = 6.4\text{ cm}$, angle $ABC = 58^\circ$ and angle $AXB = 78^\circ$.

(a) Calculate AC .

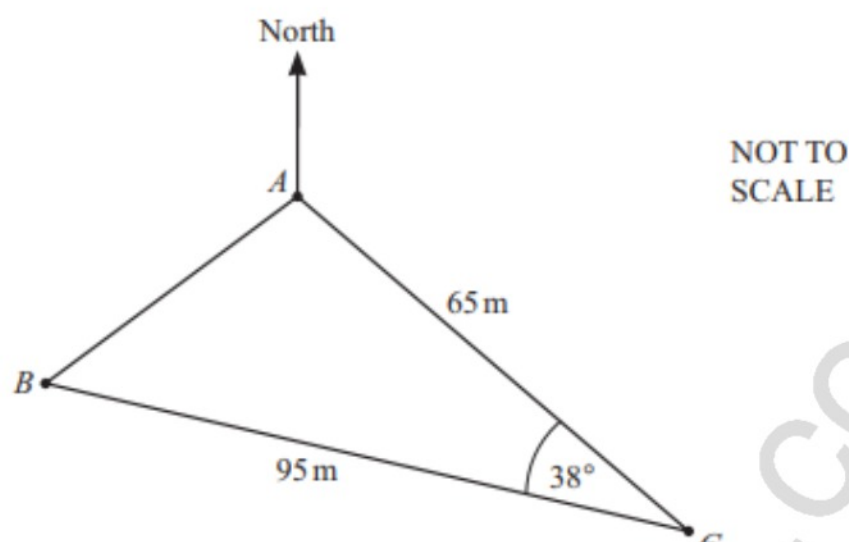
$AC = \dots\dots\dots\text{ cm}$ [4]

(b) Calculate BX .

$BX = \dots\dots\dots\text{ cm}$ [4]

(c) Calculate the area of triangle ABC .

$\dots\dots\dots\text{ cm}^2$ [3]



The diagram shows three points A , B and C on horizontal ground.
 The bearing of C from A is 145° and angle $ACB = 38^\circ$.
 $AC = 65$ m and $BC = 95$ m.

- (a) Find the bearing of B from C .

..... [2]

- (b) Show that $AB = 59.3$ m, correct to 1 decimal place.

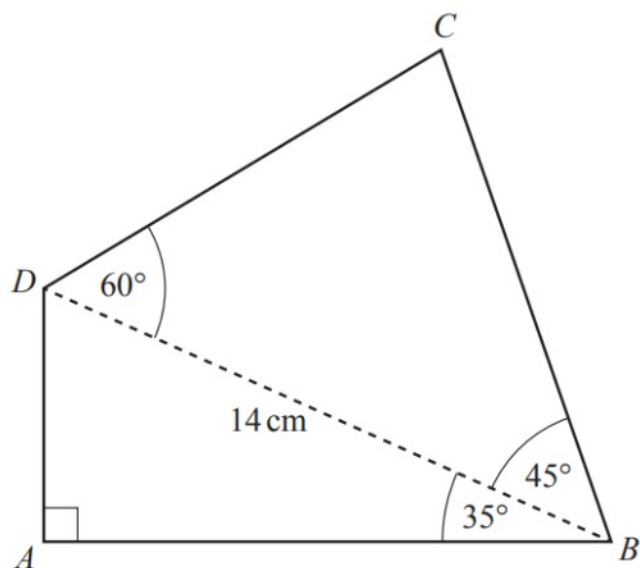
[3]

- (c) Angle BAC is obtuse.

Work out the bearing of B from A .

..... [4]

9 (a)

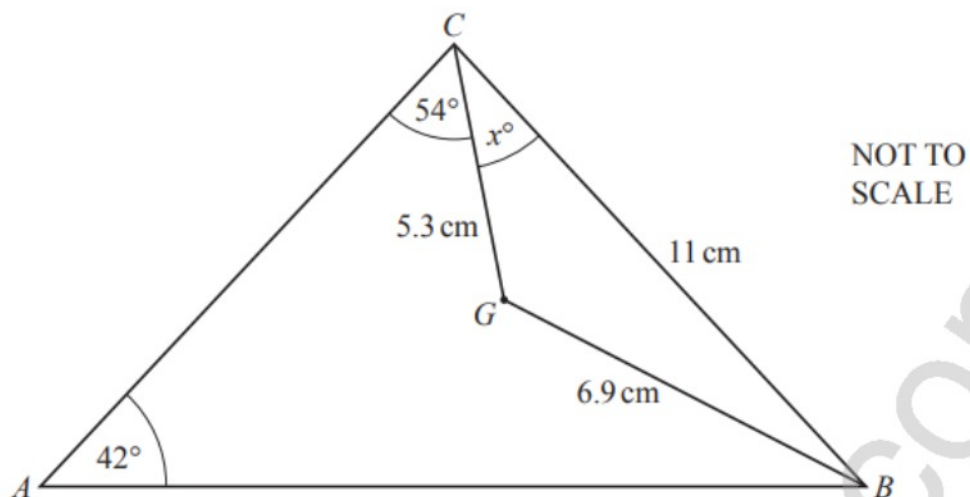


NOT TO
SCALE

Calculate the perimeter of the quadrilateral $ABCD$.

..... cm [7]

6 (a)



The diagram shows triangle ABC with point G inside.
 $CB = 11\text{ cm}$, $CG = 5.3\text{ cm}$ and $BG = 6.9\text{ cm}$.
Angle $CAB = 42^\circ$ and angle $ACG = 54^\circ$.

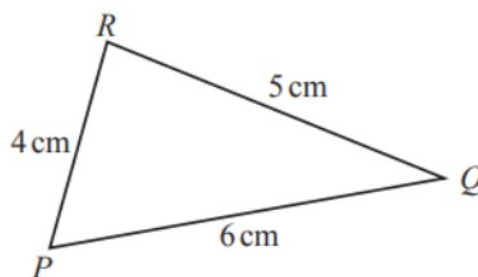
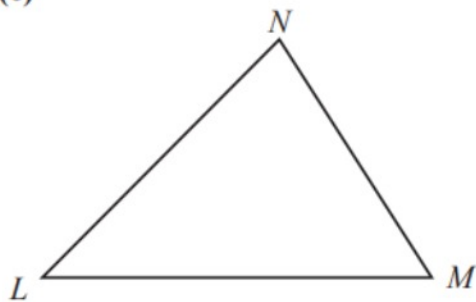
(i) Calculate the value of x .

$x = \dots\dots\dots$ [4]

(ii) Calculate AC .

$AC = \dots\dots\dots\text{ cm}$ [4]

(c)



NOT TO
SCALE

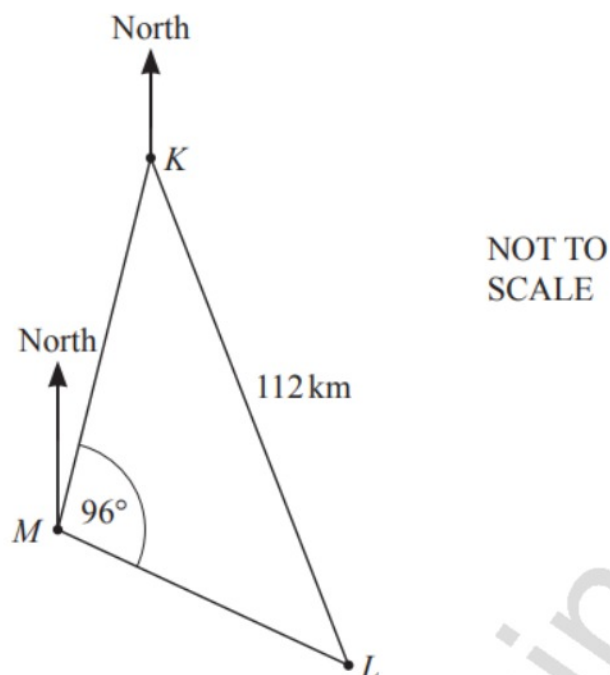
In triangle LMN , the ratio angle L : angle M : angle $N = 4 : 5 : 6$.

In triangle PQR , $PQ = 6$ cm, $PR = 4$ cm and $QR = 5$ cm.

Calculate the difference between the largest angle in triangle PQR and the largest angle in triangle LMN .

..... [7]

(c)



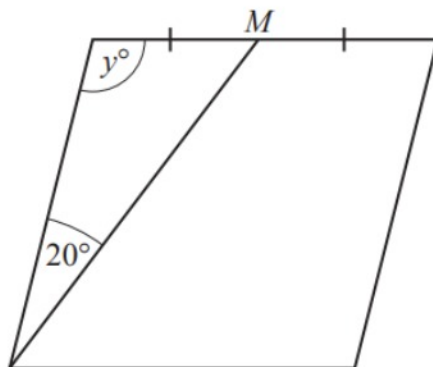
The diagram shows the positions of a lighthouse, L , and two ships, K and M .
The bearing of L from K is 155° and $KL = 112$ km.
The bearing of K from M is 010° and angle $KML = 96^\circ$.

Find the bearing and distance of ship M from the lighthouse, L .

Bearing

Distance km [5]

(b)

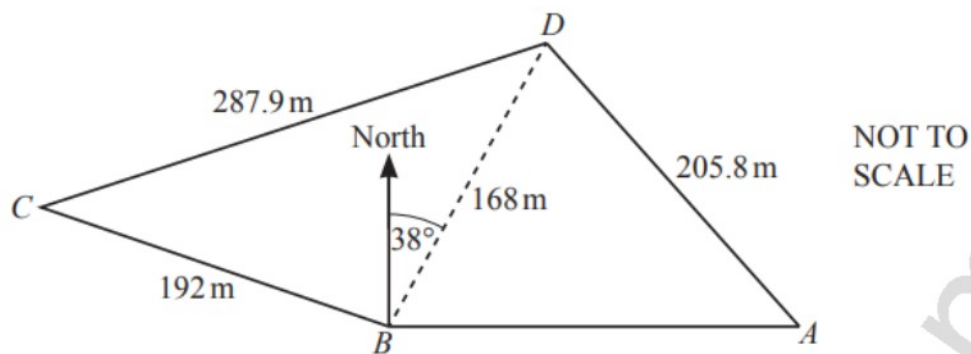


NOT TO
SCALE

This rhombus has perimeter 20 cm and angle y is obtuse.
 M is the midpoint of one of the sides.

Find the value of y .

$y = \dots\dots\dots$ [5]



The diagram shows a field, $ABCD$, on horizontal ground.
 $BC = 192$ m, $CD = 287.9$ m, $BD = 168$ m and $AD = 205.8$ m.

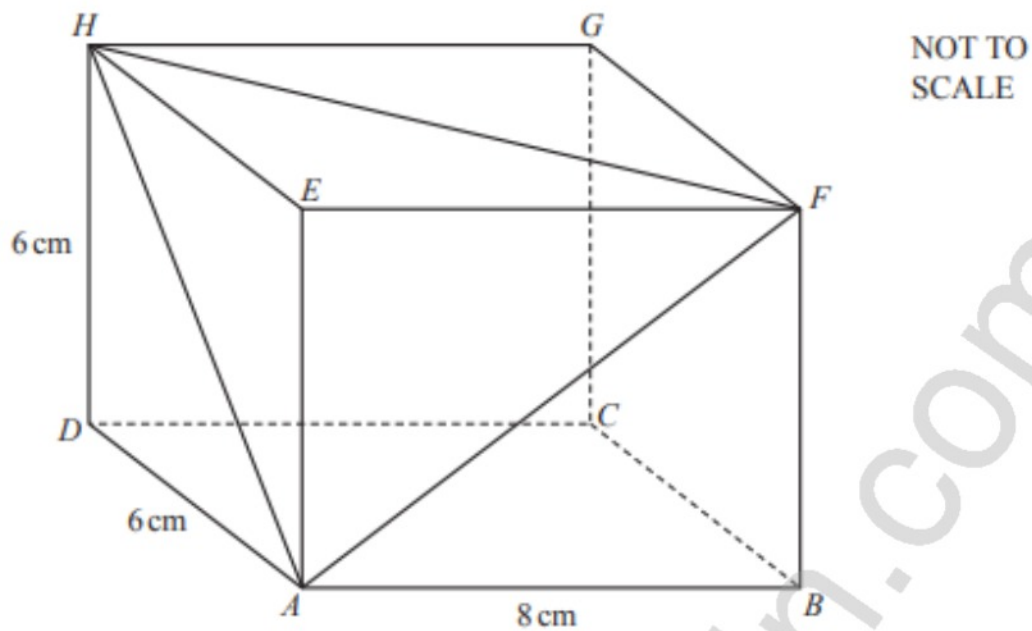
- (a) (i) Calculate angle CBD and show that it rounds to 106.0° , correct to 1 decimal place.

[4]

- (ii) The bearing of D from B is 038° .

Find the bearing of C from B .

[1]



The diagram shows a cuboid.
 $AB = 8\text{ cm}$, $AD = 6\text{ cm}$ and $DH = 6\text{ cm}$.

Calculate angle HAF .

Angle $HAF = \dots\dots\dots$ [6]