1 In triangle RPQ,

$RP = 8.7$ cm
$PQ = 5.2$ cm
Angle $PRQ = 32°$

(a) Assuming that angle PQR is an acute angle, calculate the area of triangle RPQ.
Give your answer correct to 3 significant figures.

..... cm^2

(4)

(b) If you did not know that angle PQR is an acute angle, what effect would this have on your calculation of the area of triangle RPQ?

.....

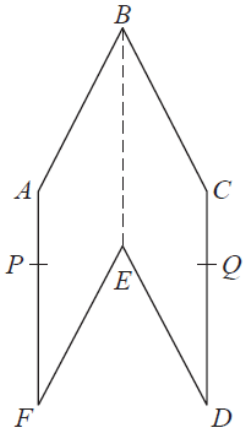
.....

.....

(1)

(Total for Question is 5 marks)

2 The diagram shows a hexagon $ABCDEF$.



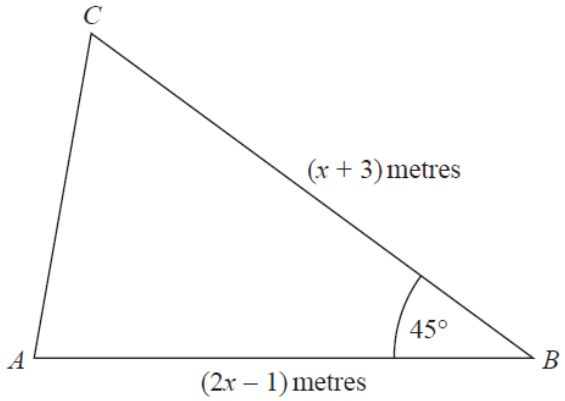
$ABEF$ and $CBED$ are congruent parallelograms where $AB = BC = x$ cm.
P is the point on AF and Q is the point on CD such that $BP = BQ = 10$ cm.

Given that angle $ABC = 30°$,

prove that $\cos PBQ = 1 - \dfrac{(2 - \sqrt{3})}{200}x^2$

(Total for Question is 5 marks)

3



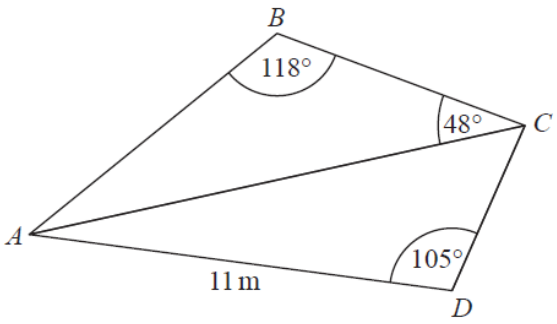
The area of triangle ABC is $6\sqrt{2}$ m^2.

Calculate the value of x.
Give your answer correct to 3 significant figures.

.....

(Total for Question is 5 marks)

4 ABC and ADC are triangles.



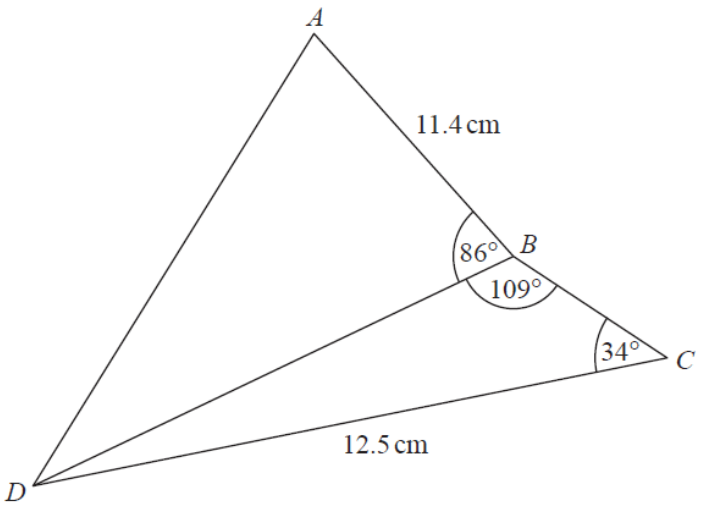
The area of triangle ADC is $56\,m^2$

Work out the length of AB.
Give your answer correct to 1 decimal place.

..... m

(Total for Question is 5 marks)

5

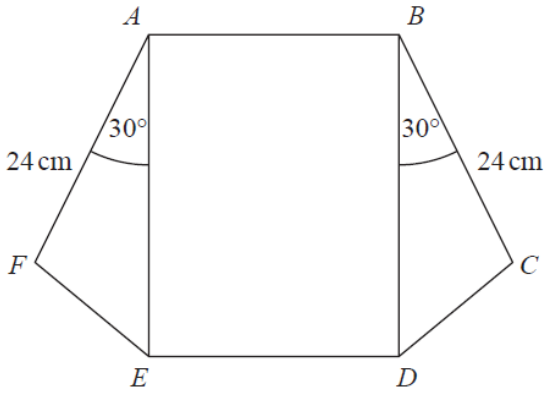


Work out the length of AD.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question is 5 marks)

6 The diagram shows a rectangle, $ABDE$, and two congruent triangles, AFE and BCD.



area of rectangle $ABDE$ = area of triangle AFE + area of triangle BCD

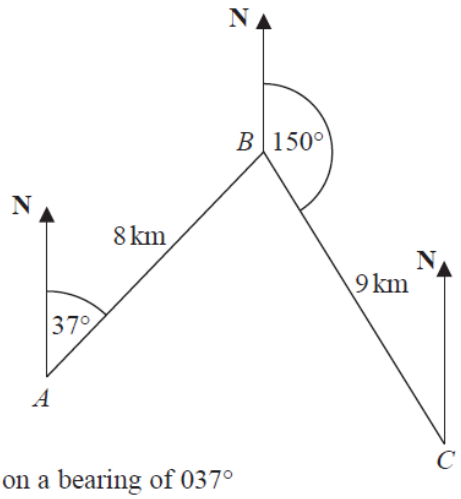
$$AB : AE = 1 : 3$$

Work out the length of AE.

..... cm

(Total for Question is 4 marks)

7 The diagram shows the positions of three towns, Acton (A), Barston (B) and Chorlton (C).



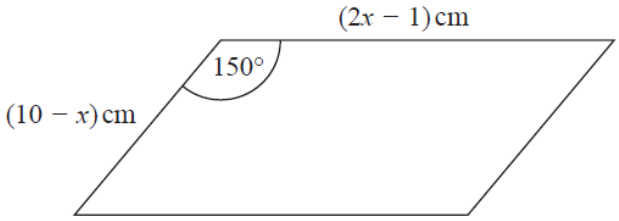
Barston is 8 km from Acton on a bearing of 037°
Chorlton is 9 km from Barston on a bearing of 150°

Find the bearing of Chorlton from Acton.
Give your answer correct to 1 decimal place.
You must show all your working.

.....°

(Total for Question is 5 marks)

8 The diagram shows a parallelogram.



The area of the parallelogram is greater than 15 cm^2

(a) Show that $2x^2 - 21x + 40 < 0$

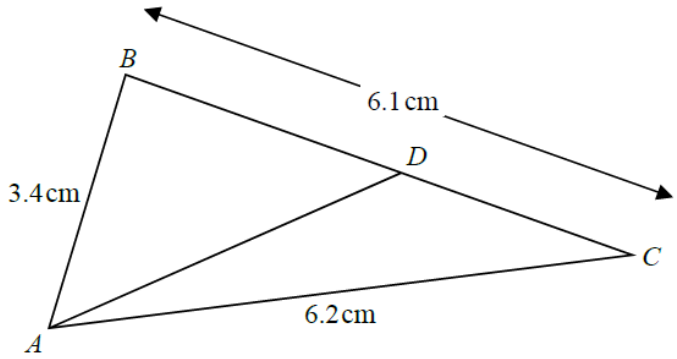
(3)

(b) Find the range of possible values of x.

(3)

(Total for Question is 6 marks)

9 The diagram shows triangle ABC.



$AB = 3.4\,\text{cm}$ $AC = 6.2\,\text{cm}$ $BC = 6.1\,\text{cm}$

D is the point on BC such that

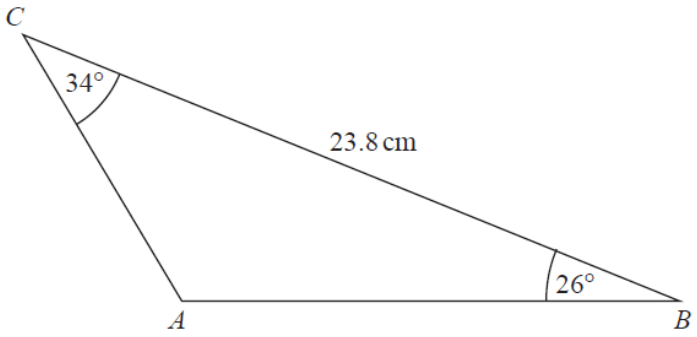
$$\text{size of angle } DAC = \frac{2}{5} \times \text{size of angle } BCA$$

Calculate the length DC.
Give your answer correct to 3 significant figures.
You must show all your working.

..... cm

(Total for Question is 5 marks)

10 Here is triangle ABC.

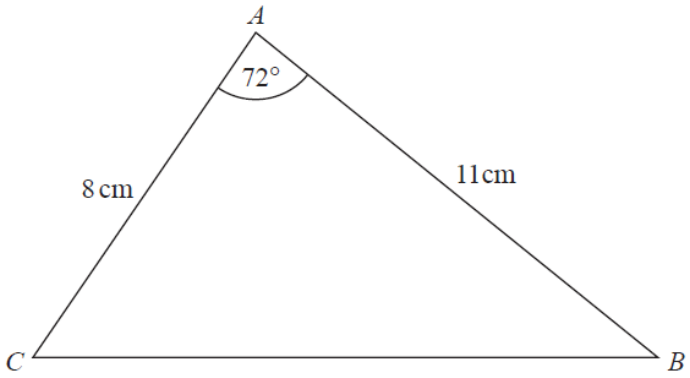


Work out the length of AB.
Give your answer correct to 1 decimal place.

..... cm

(Total for Question is 3 marks)

11 Here is triangle ABC.



(a) Find the length of BC.
Give your answer correct to 3 significant figures.

..... cm

(3)

(b) Find the area of triangle ABC.
Give your answer correct to 3 significant figures.

..... cm^2

(2)

(Total for Question is 5 marks)