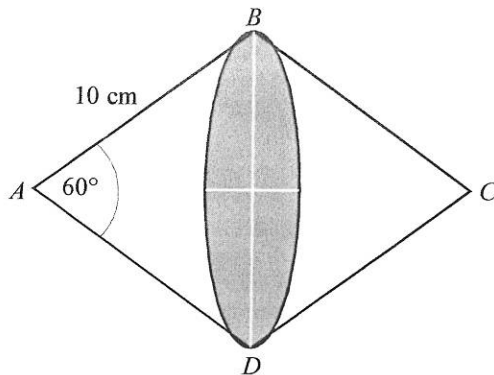


Sine and Cosine Rule

1. $ABCD$ is a rhombus with side length 10 cm.



Angle $BAD = 60^\circ$.

ABD is a sector of a circle with centre A .

CBD is a sector of a circle with centre C .

- (a) Calculate the area of triangle ABD .

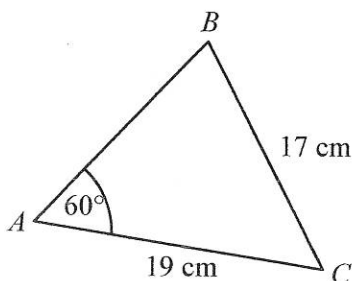
(2)

- (b) Calculate the shaded area.

(3)

(Total 5 marks)

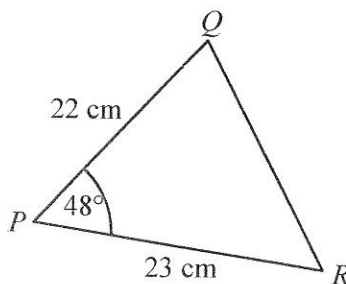
2. (a) ABC is a triangle.
 $AC = 19$ cm, $BC = 17$ cm and angle $BAC = 60^\circ$



Calculate the size of angle ABC .

(3)

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



Calculate the length of QR .

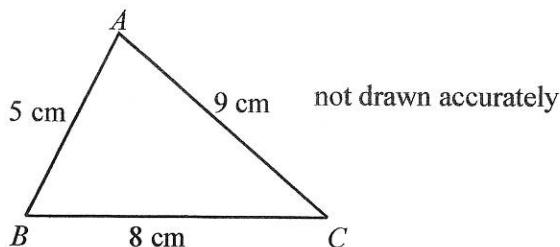
Give your answer to an appropriate degree of accuracy.

(4)

(Total 7 marks)

Sine and Cosine Rule

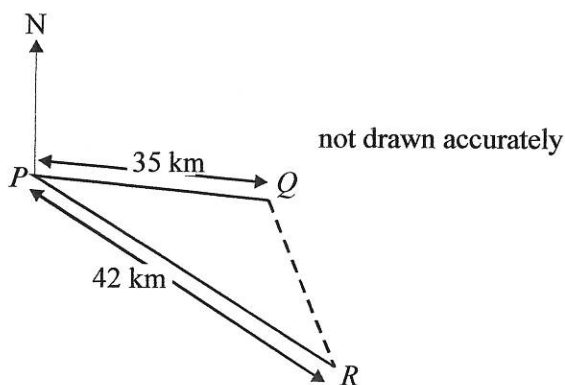
3. In triangle ABC , $AB = 5$ cm, $BC = 8$ cm and $AC = 9$ cm.



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

4. The diagram shows the positions of three towns, P , Q and R .
 Q is 35 km from P on a bearing 10° .
 R is 42 km from P on a bearing 12° .

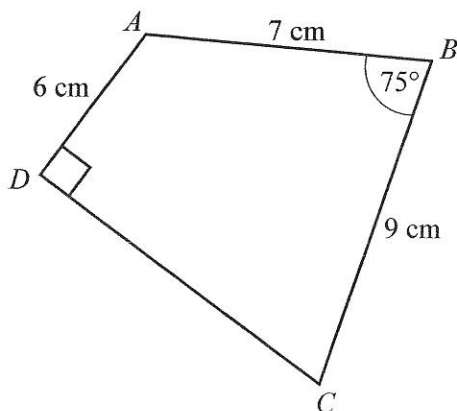
(Total 3 marks)



Calculate the distance from Q to R .

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

(Total 4 marks)



Not drawn accurately

Calculate the perimeter of $ABCD$.

(Total 5 marks)