1. \(ABCD\) is a rhombus with side length 10 cm.

\[ \text{Angle } BAD = 60^\circ. \]

\(ABD\) 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,

\[ AC = 19 \text{ cm}, \ BC = 17 \text{ cm} \quad \text{and angle } BAC = 60^\circ \]

Calculate the size of angle \(ABC\). (3)

(b) \(PQR\) is a triangle.

\[ PR = 23 \text{ cm}, \ PQ = 22 \text{ cm} \quad \text{and angle } QPR = 48^\circ \]

Calculate the length of \(QR\).

Give your answer to an appropriate degree of accuracy. (4) (Total 7 marks)
3. In triangle $ABC$, $AB = 5\, \text{cm}$, $BC = 8\, \text{cm}$ and $AC = 9\, \text{cm}$.

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 $35\, \text{km}$ from $P$ on a bearing $10^\circ$.
   $R$ is $42\, \text{km}$ from $P$ on a bearing $12^\circ$.

Calculate the distance from $Q$ to $R$.

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

Calculate the perimeter of $ABCD$. 

(Total 3 marks)  

(Total 4 marks)  

(Total 5 marks)