**9A The Cosine Rule**

1. A triangle has sides of 4cm, 5cm and 6cm respectively. Find the size of the smallest angle
2. Coastguard station B is 8km on a bearing of 060˚ from coastguard station A. A ship C is 4.8km, on a bearing of 018˚, away from A.
3. In the triangle below, PQ = xcm, QR = (x + 2)cm, RP = 5cm and angle PQR = 60˚. Find the value of x.



**9B The Sine Rule**

1. Calculate the labelled side in the triangle below:



1. Calculate the labelled angle in the triangle to the right:



**9C The Sine Rule (Ambiguous Case)**

1. In triangle ABC, AB = 4cm, BC = 3cm and angle BAC = 44°. Work out the possible values of ACB.

**9D Trigonometric Area Formula**

1. Calculate the area of the triangle shown below



1. The area of the triangle to the right is 60cm2.

Show that x2 – 3x - 240 = 0



**9E Problem Solving**

1. The diagram shows the locations of four mobile phone masts in a field. $BC=75m$, $CD=80m$, angle $BCD=55^{°}$ and angle $ADC=140^{°}$

The masts must be at least 70m apart so that they do not interfere with each other. Given that A is the minimum distance from D, find the distance AB.



**9F Trigonometric Graphs**



**9G Graphical Transformations of Trigonometric Graphs**

1. The graph shows the Function:

 f(x) = Sinθ + k



1. Write down the value of k
2. What is the smallest positive value of θ that gives a minimum point?
3. What is the value of Sinθ at this point?
4. The graph shows the Function:

 f(x) = Cos(θ + k)



1. Write down the value of k
2. What is the value of θ at x?
3. What are the coordinates of the minimum?
4. What is the value of Cosθ at y?