

**Q1.** Draw the locus of all points that are exactly 3 cm from the line  $PQ$ .

$P$  \_\_\_\_\_  $Q$

(Total 2 marks)

**Q2.** (a) Draw the locus of all points which are equidistant from the points  $A$  and  $B$ .

$A$  ×

×  $B$

(2)

(b) Draw the locus of all points that are exactly 3 cm from the line  $PQ$ .



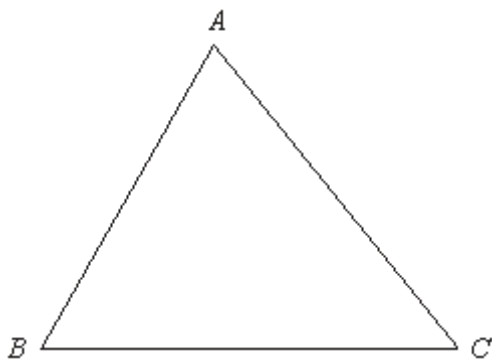
(2)  
(Total 4 marks)

**Q3.** Draw the locus of all points which are equidistant from the points  $A$  and  $B$ .



(Total 2 marks)

**Q4.**



$ABC$  is a triangle.

Shade the region inside the triangle which is **both**

less than 4 centimetres from the point  $B$  **and** closer to the line  $AC$  than the line  $AB$ .

**(Total 4 marks)**

M1.

Answer	Mark	Additional Guidance
Within guidelines	2	<b>B2</b> for fully correct shape within or touching guidelines ( <b>B1</b> for two correct parallel lines within or touching guidelines <b>or</b> two correct semicircles at ends within or touching guidelines <b>or</b> correct shape outside guidelines)  NB: Accept dotted lines. Ignore any additional lines or drawings, e.g. full circles drawn at ends
<b>Total for Question: 2 marks</b>		

M2.

	Answer	Mark	Additional Guidance
(a)	Within guide	2	<b>B2</b> for line at least 2cm long within inner guideline <b>B1</b> for line at least 2cm long completely or partially outside inner guidelines but within outer guidelines <b>or</b> line within inner guidelines of length less than 2cm or at least 3 relevant points within inner guidelines <b>or</b> 2 pairs of relevant intersecting arcs within inner guidelines. NB : Ignore any additional lines or drawings
(b)	Within guide	2	<b>B2</b> for fully correct shape within or touching guidelines ( <b>B1</b> two correct parallel lines within or touching guidelines <b>allow or</b> two correct semicircles at ends within or touching guidelines <b>allow or</b> correct shape outside guidelines) NB: Accept dotted lines. Ignore any additional lines or drawings eg. Full circles drawn at ends
<b>Total for Question: 4 marks</b>			

M3.

Answer	Mark	Additional Guidance
Within guide	2	<b>B2</b> for line at least 2cm long within inner guideline <b>B1</b> for line at least 2cm long completely or partially outside inner guidelines but within outer guidelines <b>or</b> line within inner guidelines of length less than 2cm <b>or</b> at least 3 relevant points within inner guidelines <b>or</b> 2 pairs of relevant intersecting arcs within inner guidelines. NB : Ignore any additional lines or drawings
<b>Total for Question: 2 marks</b>		

M4.

Answer	Mark	Additional Guidance
Diagram	4	<b>M1</b> arc radius 4 cm centre $B$ within the guidelines <b>M1</b> angle bisector from $A$ to $BC$ within the guidelines <b>A1</b> for clear indication that inside of arc is being identified as correct region for the first condition, or that side of straight line nearer to $C$ is identified as correct region for the second condition. (Note that only 1 of the Ms need be awarded for this A mark to be awarded) <b>A1</b> fully correct region Ignore any drawing outside the given triangle
<b>Total for Question: 4 marks</b>		



**E1.** This question was well attempted by many candidates using the correct equipment of ruler and compasses. Although some candidates made no attempt to draw the locus most had at least some idea of what was required. Many gained one mark for a partially correct answer – often this was for drawing a correct semicircle at each end of the line but omitting the two parallel lines.

**E2.** Candidates did not appear to be well prepared for this question. Over half of the candidates did not score any marks. In part (a) many candidates scored full marks without drawing arcs, by either measuring to the centre of  $AB$  or even estimating where the centre was and drawing a vertical line. Other attempts just showed two arcs intersecting or touching. At time the arcs were drawn such they would have intersected outside the page. The number of candidates who drew two pairs of intersecting arcs and then drew the line through the intersections was very small. In part (b) many candidates drew extraneous lines, circles and arcs. Some candidates drew just the lines or just the arcs.

**E3.** This was extremely poorly done with the vast majority of the candidates having little idea of what was required. Many drew arcs and circles all over the place whilst many others did not attempt the question at all or just drew in the line  $AB$ . A few did attempt two arcs from  $A$  and  $B$ , mostly with their radius the same size as  $AB$ . Where these arcs joined in two places they were awarded one mark. A few others did manage to score one mark by marking 3 points within the guidelines.

**E4. Specification A**

Candidates were very successful at using compasses to draw an arc with centre  $B$  and radius 4 cm and shading the correct side of the arc.

About a quarter of the candidates were able to draw the angle bisector from  $A$  to  $BC$  and those who did usually went on to get full marks. Many candidates drew the perpendicular bisector of  $BC$  and some drew a vertical line from  $A$  to  $BC$ . Some bisected the wrong angle (usually  $B$ ) and some drew more than one arc but no straight lines. One third of the candidates, though, gained no marks at all in this question.

### Specification B

There was a large spread of marks on this question. Many candidates scored at least 2 marks by showing that the required region must lie inside the arc of radius 4 cm centre  $B$ . Responses to the second condition were more varied with many candidates putting in the altitude from  $A$  or the median from  $A$ .