Loci – Paper 2 – Mark Scheme
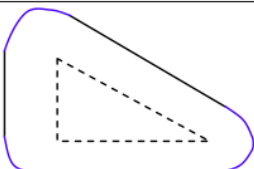
Question 1

22	Perpendicular bisector of *AC*	2	**B1** accurate line **B1** two pairs of correct construction arcs
	Bisector of angle *A*	2	**B1** accurate line **B1** two pairs of correct construction arcs
	Shaded region inside triangle **and** to left of perp bisector of *AC* **and** above bisector of angle *A*	1	**B1 dep** on first **B1** being scored for **both** lines
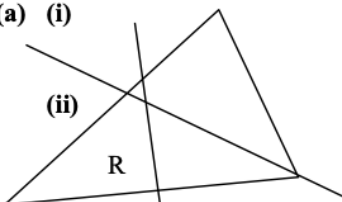
Question 2

11		3	Marks allocated for R in one of the regions shown

Question 3

14		3	**M1** 2 lines correct length **M1** 2 compass arcs correct length **A1** complete accurate drawing with all lines and arcs solid

Question 4

20	(a) (i)	2	**B1** correct line **B1** 2 sets of correct arcs
	(ii)	2	**B1** correct line **B1** two sets of correct arcs
	(b)	1	correct region, shaded or shown by the letter R

Question 5

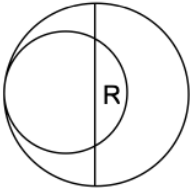| 9	(a) Correct perpendicular bisector with arcs	2	**B1** correct line **B1** correct construction arcs
	(b) 60°	1	

Question 6

19	(a) correct bisector (through 3½, 3½)	2	B1 correct line B1 correct arcs
	(b) $y = 1\frac{1}{2}x - 5$ oe	3	B2 $y = 1\frac{1}{2}x + k$ or $y = kx - 5$ k any number or B1 $1\frac{1}{2}x + k$ or $kx - 5$ If O scored allow one each for $m = 1\frac{1}{2}$ or $c = -5$ clearly identified in working
	(c) 3.61	2	M1 $\frac{1}{2} \times L \times L = 6.5$ or M1 $\sqrt{(3^2 + 2^2)}$

Question 7

9	(a)	angle of 67° at B	1	B1 C marked on AD unless the line stops at AD and also correct ruled line
	(b)	perpendicular bisector of AB	2	B1 correct arcs B1 correct ruled line

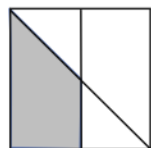## Question 8

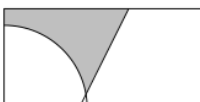| 17	(a)		2	B1 for correct line, on each side of AB (longer than dash at C) B1 for 2 pairs of intersecting arcs
			1	Intention to draw a full correct circle
	(b)		1	R shaded must be a closed region

Question 9

6	Accurate perpendicular bisector of RT with arcs.	2	B1 for 2 pairs of correct arcs B1 for correct line

Question 10

7	(a)	Equidistant from A and B (or C and D or AD and BC)	1	
	(b)		1	

Question 11
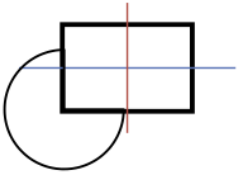
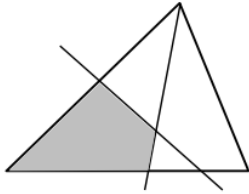| 19	(a)	arc centre A radius 5 cm	2	B1 arc with centre A
	(b)	ruled perpendicular bisector of DB with 2 pairs of correct arcs	2	B1 correct ruled line B1 2 pairs of correct arcs
	(c)	cao	1	

Question 12

20	(a) (i)	Accurate bisector of angle *B* with correct arcs	2	**B1** for correct line or correct arcs
	(ii)	Accurate perpendicular bisector of *BC* with correct arcs	2	**B1** for correct line or correct arcs
	(b) correct region shaded		1	

Question 13

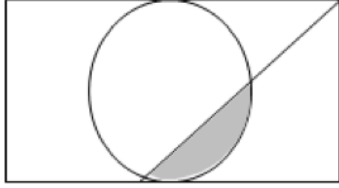| 15 | (a) | Circle, radius 3 cm, centre *A*, not inside the rectangle | 2 | **M1** for arc or full circle centre A radius 3 cm or for an incorrect size circle at A outside rectangle |
| | (b) | One line of symmetry with correct arcs. E.g.: | 2 | **B1** for correct ruled line (must reach or cross two sides)
B1 for 2 pairs of intersecting arcs |

Question 14

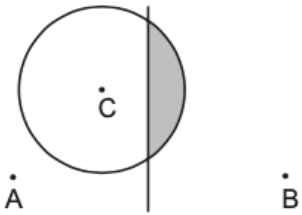| 15 | (a) | (i) | | 2 | **B2** for correct ruled bisector with correct arcs or **B1** for correct bisector with no/incorrect arcs |
| | | (ii) | | 2 | **B2** for correct ruled bisector with correct arcs or **B1** for correct bisector with no/incorrect arcs |
| | (b) | | | 1 | correct shading |

Question 15

| 20 | (a) | 102 to 106 | 2 | **B1** for 5.1 to 5.3 seen |
| | (b) | Correct position of F with correct arcs for angle bisector | 5 | **B2** for Correct ruled angle bisector of *A* with correct arcs
or **B1** for correct bisector with no/wrong arcs
and
B2 for Arc centre *C*, radius 8 cm
or **B1** for arc centre *C* with incorrect radius or correct conversion to 8cm
and
B1 for marking position of F on *their* bisector and 8cm from *C* or on *their* arc centre *C* |

Question 16

12	(a)	Complete circle centre E radius 3cm	1	
	(b)	Correct ruled bisector with two pairs of correct arcs	2	**B1** for correct bisector with no/wrong arcs
	(c)		1	dep on attempt at bisector of C and enclosed region

Question 17

19	(a)		1	Correct circle, radius 4 cm centre C
	(b)		2	**B2** for correct bisector with 2 pairs of correct arcs or **B1** for correct bisector with no/wrong arcs
	(c)		1	Correct complete boundary and correct shading. Dep on at least **B1** in (b)

Question 18

6	(a)	Correct arc centre B, radius 5.7	1	
	(b)	Shading below CN outside arc	1FT	FT shading below CN outside their arc centre B

Question 19

14	More than 20m from D oe Nearer to CD than to CB oe	2	**B1** for each

Question 20

17	(a)	Bisector of angle B accurate with two pairs of correct arcs	2	**B1** for accurate line with no/wrong arcs or for correct arcs with no/wrong line
	(b)	Ruled line parallel to AC at a distance of 3 cm to AC only inside the triangle	1	

Question 21

6	Correct perpendicular bisector with 2 pairs of correct arcs	2	**B1** for correct bisector with no arcs or incorrect arcs or for correct intersecting arcs with no/wrong line

Question 22

17	(a)	Accurate arc, centre *B*, radius 5 cm meeting both *BA* **and** *BC*	1	
	(b)	Accurate bisector through angle *B* **with** 2 pairs of correct arcs **and** reaching to at least *AC*	2	**B1** for accurate line from *B* to at least *AC* or **M1** for correct arcs
	(c)	Correct region identified 	1	

Question 23

11	(a)	Accurate angle bisector with correct arcs	2	**B1** for accurate angle bisector **or** correct arcs with no/wrong line
	(b)	Equidistant (oe) from *AB* and *AC*	1	

Question 24

9	Correct perpendicular bisector of *AB* with 2 pairs of correct arcs	2	**B1** for correct perpendicular bisector of *AB* with no or wrong arcs or for 2 pairs of correct arcs