FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

G2: Constructions and loci

Ruler and compass constructions; constructing triangles; loci

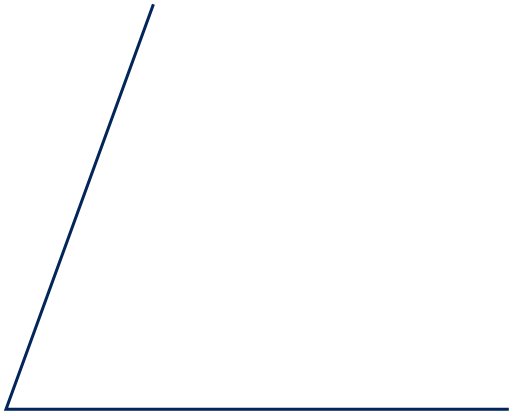
20 marks · 25 minutes · Non-calculator

1) *All diagrams in this paper are drawn accurately.* Line *AB* is drawn below. Use a ruler and compasses to construct the perpendicular bisector of *AB*. Show all your construction lines.



[Question 1: 2 marks]

2) Use a ruler and compasses to construct the bisector of this angle.



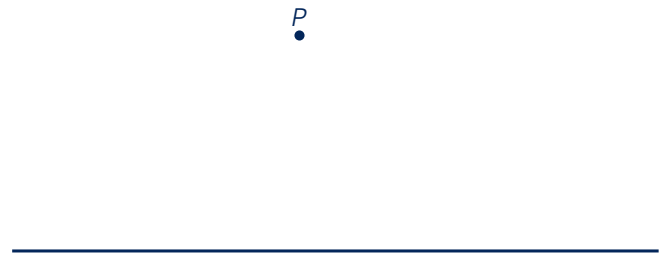
[Question 2: 2 marks]

3) Construct triangle PQR with $PQ = 7$ cm, $PR = 5$ cm and $QR = 6$ cm. Side PQ is drawn for you.



[Question 3: 2 marks]

4) Use a ruler and compasses to construct the perpendicular from point P to the line.



[Question 4: 2 marks]

5) Draw the locus of all points that are exactly 3 cm from point A.



[Question 5: 2 marks]

6) Construct an angle of 60° at A, using the line AB. Use a ruler and compasses only.



[Question 6: 2 marks]

7) The diagram shows a rectangle *ABCD*, drawn accurately. *AB* = 7 cm and *AD* = 4 cm.



(a) Draw the locus of points inside the rectangle that are 2 cm from *AB*.

(2)

(b) Shade the region inside the rectangle that is more than 2 cm from *AB* **and** less than 4 cm from *D*.

(2)

[Question 7: 4 marks]

8) Construct triangle ABC with $AB = 6\,\text{cm}$, angle $BAC = 50°$ and $AC = 5\,\text{cm}$. Side AB is drawn for you.



[Question 8: 2 marks]

9) Construct an angle of 45° at point A on the line. Use a ruler and compasses only.



[Question 9: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	Correct bisector	Two pairs of intersecting arcs (M1); line through them, crossing AB at 4 cm (A1).
2	Correct bisector	Arcs on both arms and a crossing arc (M1); bisector at $35° \pm 2°$ (A1).
3	Correct triangle	Arcs of 5 cm from P and 6 cm from Q (M1); triangle within 2 mm (A1).
4	Correct perpendicular	Arc from P cutting the line twice, then intersecting arcs (M1); perpendicular line through P (A1).
5	Circle, radius 3 cm	Circle centre A (M1); radius within 2 mm (A1).
6	60° angle	Arc from A and equal arc from the crossing point (M1); line at $60° \pm 2°$ (A1).
7	(a) Line parallel to AB (b) Correct region	(a) Line 2 cm above AB (B2). (b) Arc of radius 4 cm centred on D (B1); correct region shaded (B1).
8	Correct triangle	50° angle at A (M1); AC = 5 cm and triangle completed (A1).
9	45° angle	Perpendicular constructed at A (M1); bisected to give 45° (A1).