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GRADE 8–9 · GEOMETRY OF 2D SHAPES
Construction of Geometric Figures

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
29	45 minutes	3

Name: ..... Class: .....

Date: .....

MARK ____ / 29

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 Which instrument is used to draw a circle of a given radius? (1)

A) protractor **B)** set square
C) ruler **D)** pair of compasses

1.2 Which instrument measures the SIZE of an angle? (1)

A) compasses **B)** pencil
C) ruler **D)** protractor

1.3 To BISECT a line segment means to ... (1)

A) cut it into two equal parts **B)** measure it
C) draw it longer **D)** draw it at 90°

1.4 The perpendicular bisector of AB ... (1)

A) is parallel to AB **B)** passes through A only
C) cuts AB in half at 90° **D)** is longer than AB

1.5 Before a triangle can be constructed from three given sides, the sides must satisfy ... (1)

A) one being a right angle **B)** all being equal
C) the sum of any two being GREATER than the third **D)** all being different

1.6 Which set of lengths CANNOT form a triangle? (1)

A) 2 cm, 3 cm, 6 cm
B) 5 cm, 5 cm, 5 cm
C) 3 cm, 4 cm, 5 cm
D) 6 cm, 8 cm, 10 cm

1.7 A 60° angle can be constructed with compasses alone because it is the angle of ... (1)

A) a square
B) a hexagon's interior
C) a straight line
D) an equilateral triangle

1.8 The angles of ANY triangle add up to ... (1)

A) 180°
B) 270°
C) 360°
D) 90°

1.9 To construct a line parallel to a given line, you copy ... (1)

A) the midpoint
B) the corresponding angle
C) the perpendicular
D) the length

1.10 Arcs drawn during a construction should be ... (1)

A) rubbed out afterwards
B) left showing
C) drawn in pen
D) drawn freehand

ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2 [11 MARKS]

Answer the following about constructions. You may use only a ruler and a pair of compasses, and you must leave all your construction arcs showing.

2.1 Describe, step by step, how you would construct the perpendicular bisector of a line segment AB. (4)

STATEMENT	REASON

2.2 Explain why the compass radius must be MORE than half of AB. **(3)**

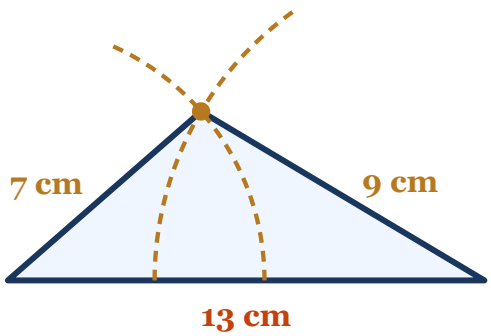
STATEMENT	REASON

2.3 Describe how you would construct an angle of $60°$ without using a protractor, and explain why the method works. **(4)**

STATEMENT	REASON

QUESTION 3 [8 MARKS]

A learner is asked to construct a triangle with sides of 7 cm, 9 cm and 13 cm, as sketched below.



Sketch only — not to scale

3.1 Show by calculation that this triangle CAN be constructed. **(3)**

STATEMENT	REASON

3.2 A second learner is asked to construct a triangle with sides 5 cm, 6 cm and 12 cm. Explain why this is impossible. **(3)**

STATEMENT	REASON

3.3 Write down the general rule you used in the two questions above. **(2)**

TOTAL: 29 marks

This question paper consists of 3 questions.

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