GRADE 10 · EUCLIDEAN GEOMETRY

Euclidean Geometry Riders: Proving It, With Reasons (Grade 10)

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
31	50 minutes	3

Name: _____ Class: _____

Date: _____

MARK ____ / 31

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 x and y are alternate angles between AB and CD, where AB ∥ CD. The reason for $x = y$ is ... (1)

A) corresp ∠s; AB ∥ CD
B) co-int ∠s; AB ∥ CD
C) alt ∠s; AB ∥ CD
D) vert opp ∠s

1.2 Co-interior angles between parallel lines are ... (1)

A) equal
B) supplementary
C) complementary
D) vertically opposite

1.3 In △ABC, $\hat{A} = 50°$ and $\hat{B} = 60°$. The exterior angle at C is ... (1)

A) $110°$
B) $70°$
C) $130°$
D) $50°$

1.4 Which condition does NOT prove two triangles congruent? (1)

A) SSS
B) SAS
C) RHS
D) AAA

1.5 If △ABC ≡ △DEF, the side equal to BC is ... (1)

A) DE
B) DF
C) EF
D) AC

1.6 A quadrilateral with one pair of opposite sides both equal AND parallel is ... (1)

A) a trapezium
B) a parallelogram
C) a kite
D) always a rhombus

1.7 The diagonals of every parallelogram ... (1)

A) bisect each other
B) are equal
C) meet at $90°$
D) bisect the angles of the parallelogram

1.8 D and E are the midpoints of AB and AC of $\triangle ABC$. If DE $= 7$ cm, then BC = ... (1)

A) 7 cm
B) $3{,}5$ cm
C) 21 cm
D) 14 cm

1.9 In $\triangle PQR$, PQ = PR and $\hat{P} = 40°$. Then $\hat{Q}$ = ... (1)

A) $40°$
B) $140°$
C) $70°$
D) $50°$

1.10 Which is a property of EVERY rectangle but not of every parallelogram? (1)

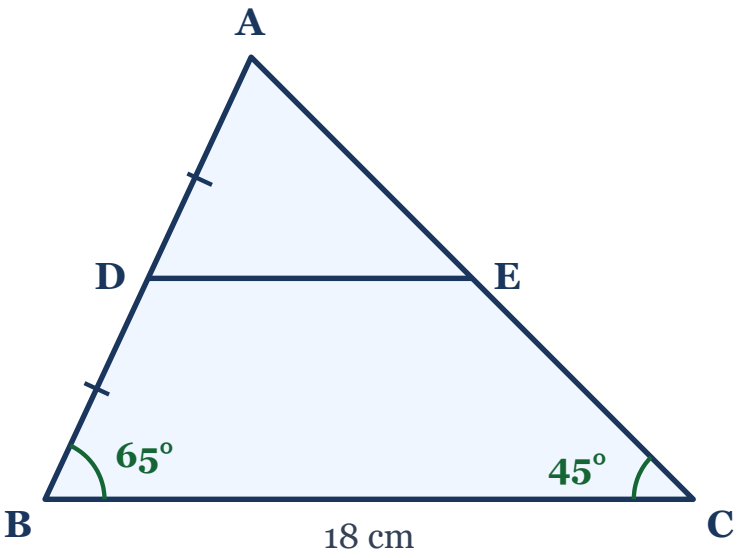
A) opposite sides are equal
B) the diagonals are equal
C) opposite sides are parallel
D) the diagonals bisect each other

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]**

In the diagram below, D lies on AB and E lies on AC of $\triangle ABC$, with DE $\parallel$ BC. D is the midpoint of AB, $A\hat{B}C = 65°$, $A\hat{C}B = 45°$ and BC $= 18$ cm.



2.1 Determine, with reasons, the sizes of $A\hat{D}E$ and $D\hat{E}C$. **(4)**

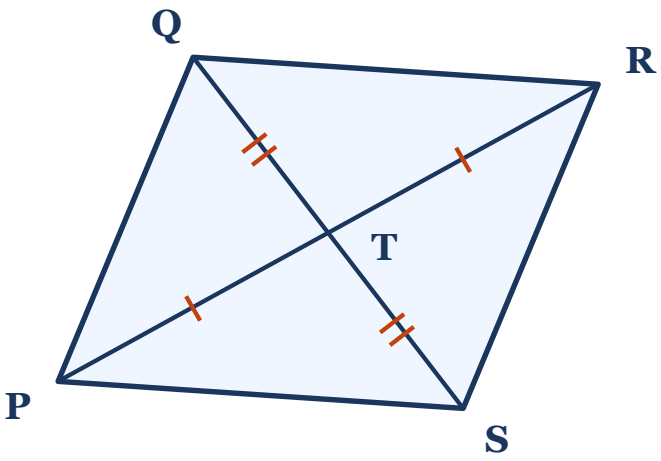
2.2 Explain why E is the midpoint of AC. **(2)**

2.3 Calculate the length of DE, giving a reason. **(3)**

2.4 Determine BÂC, with a reason. **(2)**

QUESTION 3 [10 MARKS]

In the diagram below, the diagonals PR and QS of quadrilateral PQRS bisect each other at T.



3.1 Prove that △PTQ ≡ △RTS. **(4)**

3.2 Hence prove that PQ ∥ SR. **(3)**

3.3 Explain why PQRS is a parallelogram. **(3)**

TOTAL: 31 marks

This question paper consists of 3 questions.

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