EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
34	55 minutes	3

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

Date: .....

MARK ____ / 34

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 In △ABC, D is the midpoint of AB and E the midpoint of AC. Then DE ... (1)

A) is parallel to BC and equal to it
B) bisects BC
C) is parallel to BC and half its length
D) is perpendicular to BC

1.2 In △PQR, X and Y are the midpoints of PQ and PR. If QR = 18 cm then XY = ... (1)

A) 36 cm
B) 9 cm
C) 18 cm
D) 6 cm

1.3 In △ABC, D is the midpoint of AB and DE ∥ BC with E on AC. Then E is ... (1)

A) any point on AC
B) one third of the way along AC
C) the point where AC = BC
D) the midpoint of AC

1.4 In △ABC, DE joins the midpoints of AB and AC and DE = 7 cm. Then BC = ... (1)

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

1.5 △ABC has perimeter 36 cm. The triangle formed by joining all three midpoints has perimeter ... (1)

A) 9 cm
B) 36 cm
C) 12 cm
D) 18 cm

1.6 In △ABC, DE joins the midpoints of AB and AC. Then △ADE and △ABC are ... (1)

A) similar, with sides in the ratio 1 : 2
B) not related at all
C) congruent
D) similar, with sides in the ratio 1 : 4

1.7 In $\triangle ABC$, DE joins the midpoints of AB and AC. If $\triangle ADE$ has area $5\ cm^2$ then $\triangle ABC$ has area ... (1)

A) $25\ cm^2$ **B)** $15\ cm^2$

C) $10\ cm^2$ **D)** $20\ cm^2$

1.8 In $\triangle ABC$, D is the midpoint of AB, and the line through D parallel to BC meets AC at E. Which statement is TRUE? (1)

A) E is the midpoint of AC **B)** $DE = BC$

C) $AE = EC = BC$ **D)** $DE \parallel AB$

1.9 In $\triangle ABC$, $AB = 10$ and $AC = 16$. D is the midpoint of AB and $DE \parallel BC$ with E on AC. Then $AE = ...$ (1)

A) 8 **B)** 5

C) 10 **D)** 16

1.10 Why is the midpoint theorem so useful inside a proof? (1)

A) it proves a quadrilateral is a rhombus **B)** it finds the area of a triangle

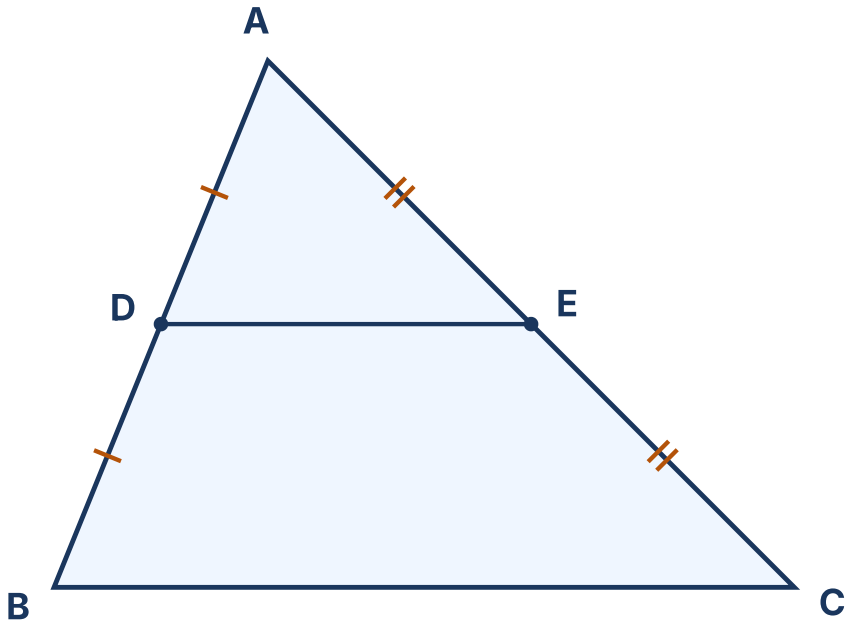
C) it gives a parallel line AND a length in one step **D)** it proves two triangles congruent

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 [9 MARKS]

In $\triangle ABC$, D is the midpoint of AB and E is the midpoint of AC. BC $= 18$ cm.



not drawn to scale

2.1 Calculate the length of DE, and give a reason. (3)

STATEMENT	REASON

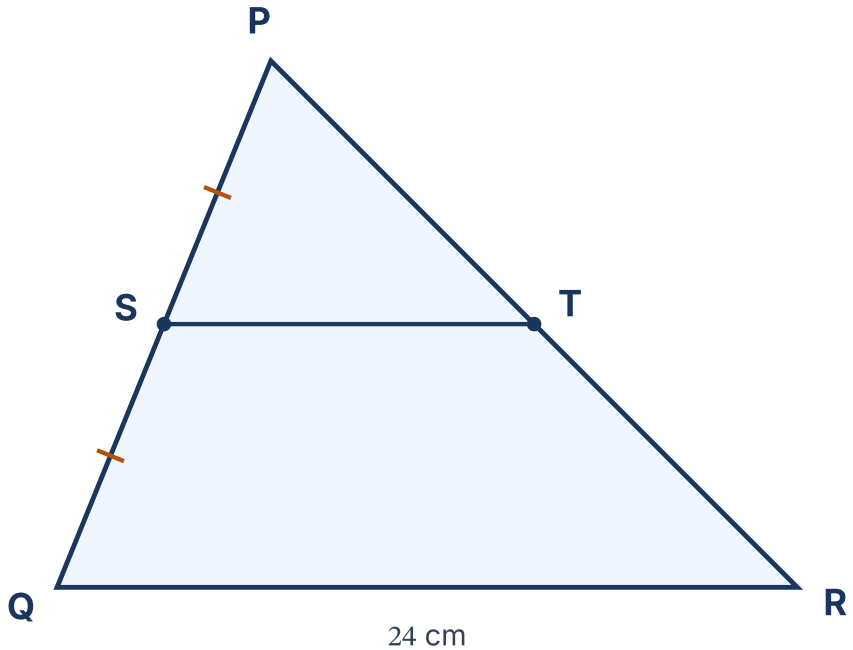
2.2 Write down the relationship between DE and BC other than their lengths, give a reason, and hence state what kind of quadrilateral DBCE is, with a reason. (3)

STATEMENT	REASON

2.3 In a different triangle, the line joining the midpoints of two sides is $7{,}5$ cm long. Calculate the length of the third side. (3)

QUESTION 3 [15 MARKS]

In $\triangle PQR$, S is the midpoint of PQ and ST $\parallel$ QR, with T on PR.



not drawn to scale

3.1 Prove that T is the midpoint of PR. **(4)**

STATEMENT	REASON

3.2 If QR $= 24$ cm, calculate the length of ST, giving a reason for the ratio you use. **(3)**

3.3 If the perimeter of $\triangle PQR$ is 60 cm, determine the perimeter of $\triangle PST$. **(4)**

3.4 State what happens to the AREA of △PST compared with △PQR, give a reason, and hence calculate the area of quadrilateral STRQ if the area of △PQR is 96 cm^2. **(4)**

STATEMENT	REASON

TOTAL: 34 marks

This question paper consists of 3 questions.

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