Mathematics — Ganita Manjari

Chapter 12 Test 5

Quadrilaterals

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

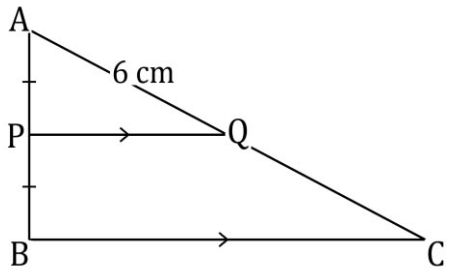
General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Give exact answers unless an approximation is requested.
3. Figures are not necessarily to scale. Give reasons for geometrical conclusions.

SECTION A

(5 questions × 1 mark = 5 marks)

1. In figure, $AP = PB$ and $PQ \parallel BC$. Find QC.



(A) 3 cm
(B) 9 cm
(C) 6 cm
(D) 12 cm

2. The midpoint-converse proof compares two parallels through the same point. Which fact makes them the same line?

(A) Uniqueness of a parallel
(B) All triangles are congruent
(C) All diagonals are equal
(D) Every angle is a right angle

3. $P \in AB$, $Q \in AC$ and $PQ \parallel BC$. Which additional condition guarantees that Q is the midpoint of AC?

(A) $AB = AC$
(B) $\angle A = 90°$
(C) $BC = AC$
(D) $AP = PB$

4. A segment joins two side midpoints of a triangle. Which segments from the opposite vertex to the third side does it bisect?

(A) Only the median
(B) Every such segment
(C) Only the altitude
(D) None of them

5. When paper is folded to place A on B, every point X on the crease satisfies:

(A) $XA = AB$
(B) $XB = AB$
(C) $XA = XB$
(D) $XA + XB = AB$

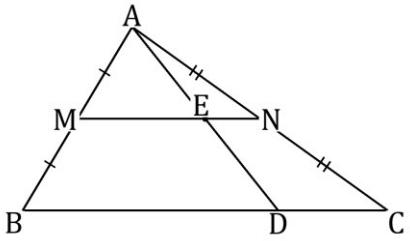
SECTION B

(4 questions × 2 marks = 8 marks)

6. P is the midpoint of AB, and $PQ \parallel BC$ meets AC at Q. If M is the midpoint of AC, prove $Q = M$.

7. P is midpoint of AB. The parallel to BC through P meets AC at Q. The parallel to AB through Q meets BC at R. Prove $BR = RC$.

8. In figure, M, N are midpoints of AB, AC, and D lies on BC. If AD meets MN at E, compare AE, ED with proof.



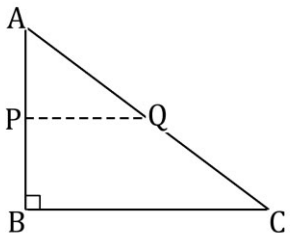
9. P is midpoint of AB, and Q lies on AC. If PQ is not parallel to BC, can Q be the midpoint? Justify.

SECTION C

(3 questions × 3 marks = 9 marks)

10. P, Q are midpoints of AB, AC. In $\triangle APQ$, R is midpoint of AP and $RS \parallel PQ$ meets AQ at S. If $QS = 9$ cm, find AS, AQ, AC.

11. The right triangle in figure is folded so that A touches B. The crease meets AB at P and AC at Q. Prove that Q is midpoint of AC.



12. M is midpoint of BC. Through M, draw $MP \parallel AC$ to AB and $MQ \parallel AB$ to AC. Prove $APMQ$ is a parallelogram with perimeter $AB + AC$.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A triangular sign has $AB = 24$ cm and $AC = 30$ cm. A rail through $P \in AB$, with $AP = 12$ cm, is parallel to BC and meets AC at Q. (i) Find AQ. (ii) Check a proposed mark 17 cm from A. (iii) State how to correct that mark.