Mathematics

Practice Test Paper 4

(Chapter 6: Triangles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give reasons for geometrical statements where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Which information is sufficient for SAS similarity?

(A) Two equal angles

(B) Two proportional sides and their equal included angles

(C) Two equal non-included angles

(D) Three equal sides

2. If corresponding sides of two similar triangles are equal, the triangles are also:

(A) Obtuse

(B) Isosceles

(C) Congruent

(D) Equilateral

3. In $\triangle ABC$, $DE \parallel BC$, $AD = 4$ cm and $DB = 6$ cm. The ratio $AE : AC$ is:

(A) 2 : 3

(B) 3 : 5

(C) 3 : 2

(D) 2 : 5

4. Two similar triangles have side ratio 5 : 8. If the first perimeter is 30 cm, the second is:

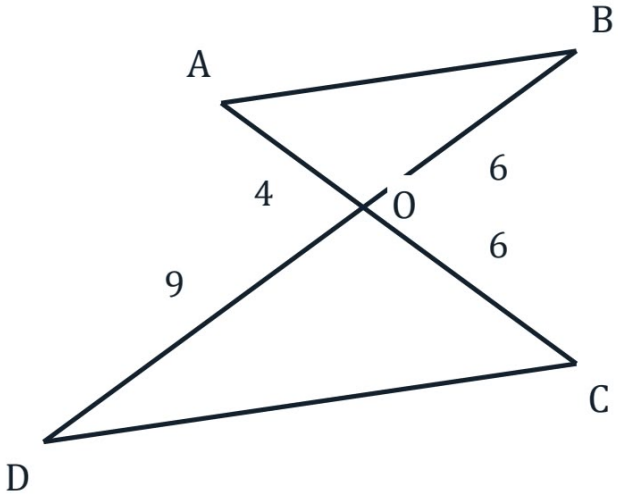
(A) 48 cm

(B) 18.75 cm

(C) 33 cm

(D) 40 cm

5. The straight lines AC and BD meet at O. Which similarity relation follows from the labelled lengths?



(A) $\triangle AOB \sim \triangle COD$

(B) $\triangle AOB \sim \triangle CDO$

(C) $\triangle ABO \sim \triangle COD$

(D) $\triangle AOB \sim \triangle OCD$

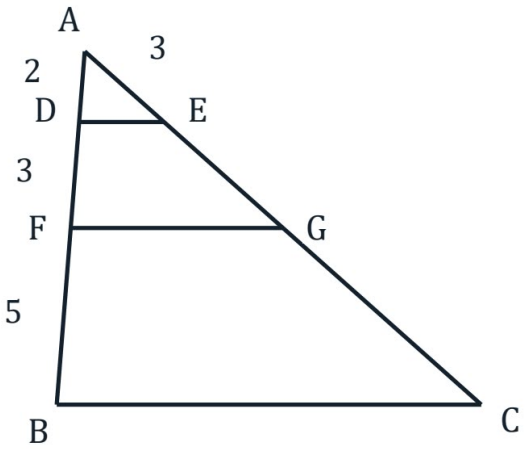
SECTION B

(4 questions × 2 marks = 8 marks)

6. State the converse of the Basic Proportionality Theorem. Apply it to a triangle with AD = 5 cm, DB = 7 cm, AE = 10 cm and EC = 14 cm, where D lies on AB and E on AC.

7. In $\triangle ABC$ and $\triangle XYZ$, $\angle A = \angle X = 55°$, AB = 7 cm, AC = 9 cm, XY = 14 cm and XZ = 18 cm. Show that $\angle B = \angle Y$.

8. In the diagram, DE ∥ FG ∥ BC. Using the labelled lengths, find EG and GC.

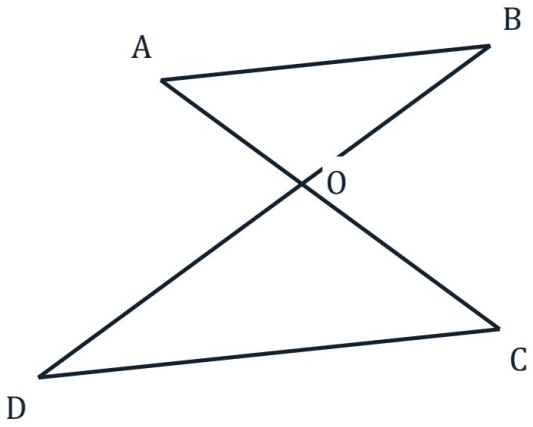


9. A triangle's sides are 7 cm, 9 cm and 12 cm. Find the sides of a similar triangle whose longest side is 18 cm.

SECTION C

(3 questions × 3 marks = 9 marks)

10. AC and BD are straight lines meeting at O. Given OA × OD = OB × OC, prove that AB ∥ CD.



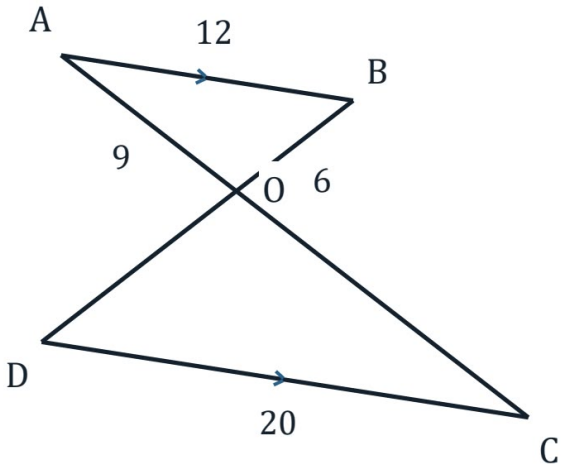
11. In △ABC, D and E lie on AB and AC with DE ∥ BC. If AD = 2x − 1, DB = x + 2, AE = 9 and EC = 6, find x, AD and AB. All lengths are in centimetres.

12. △ABC ~ △PQR and AB : PQ = 4 : 7. Their perimeters differ by 24 cm. Find both perimeters and QR if BC = 12 cm.

SECTION D

(Application Based Question - 3 marks)

13. Two parallel boundaries AB and CD of a plot are joined by diagonals meeting at O. The measurements are shown in metres.



(i) Find OA : OC.

(ii) Find OC.

(iii) Find OD.