Mathematics

Practice Test Paper 3

(Chapter 6: Triangles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

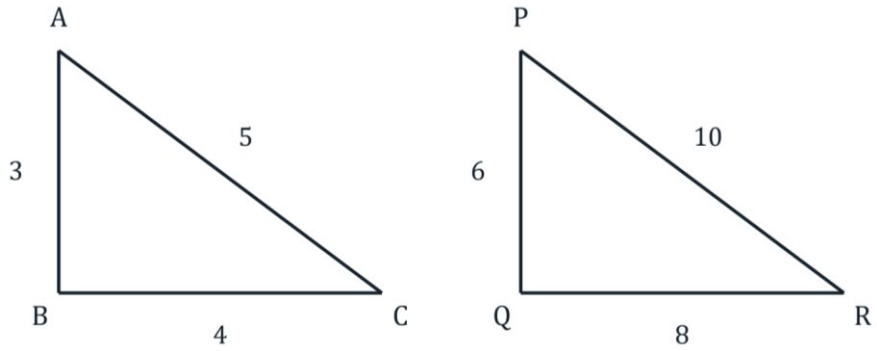
General Instructions

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 criterion proves the similarity of the triangles whose side lengths are shown?



(A) AA
(B) SSS
(C) SAS
(D) No criterion applies

2. If $\triangle DEF \sim \triangle RPQ$, which statement is correct?

(A) $\angle F = \angle P$
(B) $\angle E = \angle R$
(C) $\angle D = \angle R$
(D) $\angle D = \angle Q$

3. Two equilateral triangles have sides 5 cm and 9 cm. Their corresponding angles are:

(A) In the ratio 5 : 9

(B) Each 60°

(C) Each 90°

(D) In the ratio 25 : 81

4. D and E are midpoints of AB and AC of $\triangle ABC$. Which statement follows?

(A) $DE \perp BC$

(B) $DE = BC$

(C) $DE \parallel BC$

(D) $AD = AC$

5. A triangle has angles 42°, 61° and 77°. Which triangle is similar to it?

(A) 42°, 62°, 76°

(B) 41°, 61°, 78°

(C) 60°, 60°, 60°

(D) 77°, 42°, 61°

SECTION B

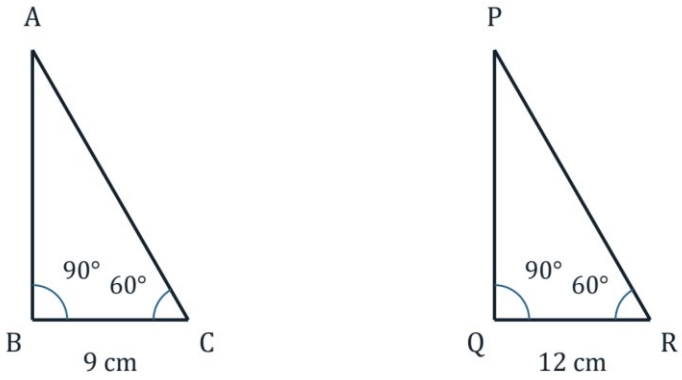
(4 questions × 2 marks = 8 marks)

6. Two triangles have sides 4 cm, 6 cm, 8 cm and 6 cm, 9 cm, 13 cm. Are they similar? Justify.

7. A photograph of a triangular roof is enlarged from a base of 8 cm to 14 cm. Its original perpendicular height is 6 cm. Find the enlarged height and explain why the ratio is valid.

8. In $\triangle PQR$, S lies on PQ and T lies on PR. Given PS = 3.9 cm, SQ = 3 cm, PT = 3.6 cm and TR = 2.4 cm, decide whether ST is parallel to QR.

9. Use the labelled angles to establish the similarity of $\triangle ABC$ and $\triangle PQR$. If PR = 24 cm, find AC.

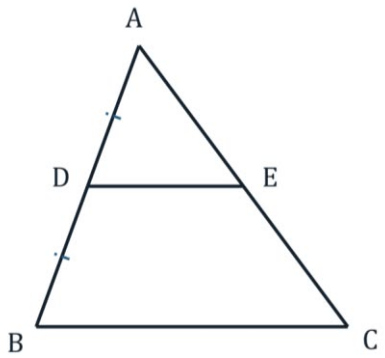


SECTION C

(3 questions × 3 marks = 9 marks)

10. In two similar triangles, the smaller triangle has perimeter 36 cm and one side 9 cm. The corresponding side of the larger triangle is 15 cm. Find the larger perimeter and its side corresponding to an 11 cm side.

11. D is the midpoint of AB and DE ∥ BC in the diagram. Prove that E is the midpoint of AC and that DE = BC/2.

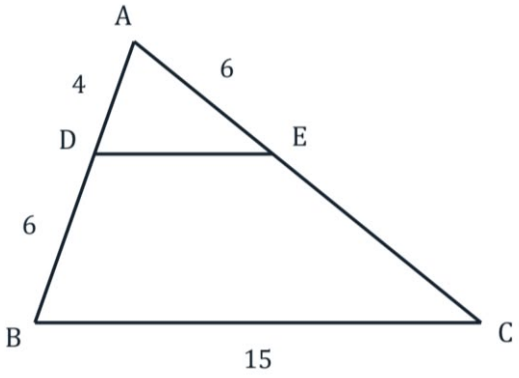


12. △ABC ~ △PQR, with A ↔ P. D and E are the feet of the perpendiculars from A and P to BC and QR. Prove that AD/PE = AB/PQ.

SECTION D

(Application Based Question - 3 marks)

13. A triangular canopy ABC has a supporting bar DE parallel to BC. All labelled lengths are in metres.



(i) Find the ratio AD : AB.

(ii) Find EC.

(iii) Find the length of the supporting bar DE.