

**CHAPTER TEST: TRIANGLES (SET-B)**

Mathematics — Class IX (2026/TRIANG/09/003)

Time: 1.5 Hours

Max. Marks: 40

**General Instructions:**

- All questions are compulsory.
- Section A: 8 MCQs (1 Mark each).
- Section B: 4 Very Short Questions (2 Marks each).
- Section C: 3 Short Questions (3 Marks each).
- Section D: 2 Long Questions (5 Marks each).
- Section E: 1 Case Study (5 Marks).

**Section A: Multiple Choice Questions (1 mark each)**

1. In a triangle, if all three sides are equal, it is called:
  - (a) Scalene
  - (b) Isosceles
  - (c) Equilateral
  - (d) Right-angled
2. Which of the following is NOT a criterion for congruence of triangles?
  - (a) SSS
  - (b) SAS
  - (c) ASA
  - (d) AAA
3. If two sides and the included angle of one triangle are equal to the corresponding sides and angle of another triangle, the triangles are congruent by:
  - (a) SSS
  - (b) SAS
  - (c) ASA
  - (d) RHS
4. In a triangle, the angle opposite the longer side is:
  - (a) Smaller
  - (b) Equal
  - (c) Larger
  - (d) None of these
5. If two angles of a triangle are  $60^\circ$  each, the triangle is:

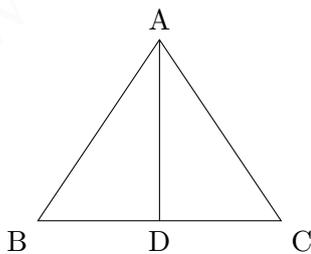
- (a) Scalene  
(b) Isosceles  
(c) Equilateral  
(d) Right-angled
6. The exterior angle of a triangle is equal to the sum of the:
- (a) Two opposite interior angles  
(b) Two adjacent interior angles  
(c) Three interior angles  
(d) None of these
7. If  $\triangle ABC \cong \triangle DEF$  by SSS, then:
- (a)  $AB = EF$   
(b)  $\angle A = \angle D$   
(c)  $BC = EF$   
(d)  $\angle B = \angle F$
8. In  $\triangle PQR$ , if  $\angle P = 70^\circ$  and  $\angle Q = 60^\circ$ , then  $\angle R$  is:
- (a)  $50^\circ$   
(b)  $60^\circ$   
(c)  $70^\circ$   
(d)  $80^\circ$

**Section B: Very Short Answer Questions (2 marks each)**

1. Define congruent triangles. Give an example.
2. State the SSS congruence criterion with a diagram.
3. In  $\triangle ABC$ , if  $AB = AC$  and  $\angle B = 70^\circ$ , find  $\angle A$  and  $\angle C$ .
4. If  $\triangle PQR \cong \triangle ABC$  by SAS, identify the corresponding parts.

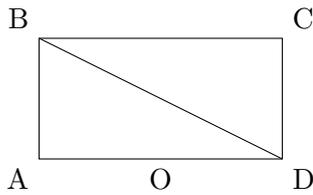
**Section C: Short Answer Questions (3 marks each)**

1. In the given figure,  $AB = AC$  and  $AD$  is the bisector of  $\angle BAC$ . Prove that  $\triangle ABD \cong \triangle ACD$ .



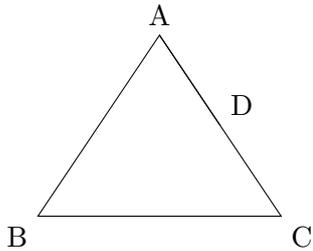
2. In  $\triangle ABC$ ,  $AB = AC$  and  $D$  is a point on  $BC$  such that  $AD \perp BC$ . Prove that  $BD = DC$ .

3. In the given figure,  $AB \parallel CD$  and  $O$  is the midpoint of  $AD$ . Show that  $\triangle AOB \cong \triangle DOC$ .

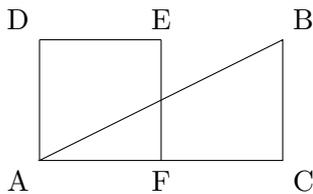


### Section D: Long Answer Questions (5 marks each)

1. In the given figure,  $AB = AC$  and  $D$  is a point on side  $AC$  such that  $AB = AD$ . Show that  $\triangle ABD \cong \triangle ACD$ . Also, find the measure of  $\angle BCD$ .

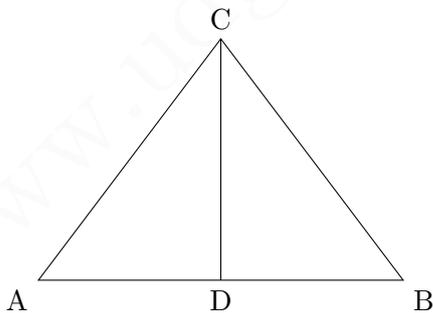


2. In the given figure,  $BA \perp AC$ ,  $DE \perp DF$ ,  $AB = DE$ , and  $BF = EC$ . Show that  $\triangle ABC \cong \triangle DEF$ .



### Section E: Case Study (5 marks)

**Case Study:** A group of students is designing a triangular garden in their school. The garden is divided into two congruent triangular plots by a pathway. The pathway starts from the midpoint of one side and meets the opposite vertex. The students want to ensure that both plots are identical in shape and size.



- The two triangular plots are congruent by which criterion?
  - SSS
  - SAS
  - ASA
  - RHS

2. If  $AC = BC$  and  $AD = BD$ , then  $\triangle ADC \cong \triangle BDC$  by:
- (a) SSS
  - (b) SAS
  - (c) ASA
  - (d) RHS
3. If  $\angle CAD = \angle CBD$ , then  $\triangle ADC \cong \triangle BDC$  by:
- (a) SSS
  - (b) SAS
  - (c) ASA
  - (d) RHS
4. If  $AD \perp BC$  and  $AD = 4$  cm, then  $BD$  is:
- (a) 2 cm
  - (b) 3 cm
  - (c) 4 cm
  - (d) 6 cm
5. If  $AB = 10$  cm and  $AD = 5$  cm, then  $CD$  is:
- (a) 5 cm
  - (b) 6 cm
  - (c) 8 cm
  - (d) 10 cm