

## CHAPTER-7 | Triangles

QUIZ  
PART-06

1. In  $\triangle ABC$ , if  $AB = AC$  and angle  $\angle B = 50^\circ$ , then what is the measure of  $\angle C$ ?

- A.  $40^\circ$   
B.  $50^\circ$   
C.  $80^\circ$   
D.  $130^\circ$  (C)

**Explanation:** In an isosceles triangle, angles opposite to equal sides are equal. Since  $AB = AC$ ,  $\angle B = \angle C$ . Using the angle sum property of triangles, we can calculate  $\angle C = 80^\circ$

2. In  $\triangle PQR$ , if  $\angle R = \angle P$  and  $QR = 4$  cm and  $PR = 5$  cm, what is the length of  $PQ$ ?

- A. 2 cm  
B. 2.5 cm  
C. 4 cm  
D. 5 cm (C)

**Explanation:** Since  $\angle R = \angle P$  and the sides opposite to equal angles are equal in an isosceles triangle,  $PQ = QR = 4$  cm

3. The angles opposite to equal sides of a triangle are:

- A. Equal  
B. Unequal  
C. Complementary angles  
D. Right angles (A)

**Explanation:** In any triangle, the angles opposite to equal sides are equal, according to the property of isosceles triangles.

4. In  $\triangle ABC$ , if  $AB = AC$  and  $\angle B = 50^\circ$  what is  $\angle C$ ?

- A.  $40^\circ$   
B.  $50^\circ$   
C.  $80^\circ$   
D.  $130^\circ$  (C)

**Explanation:** Since  $AB = AC$ ,  $\angle B = \angle C$ . Using the angle sum property of triangles, the sum of angles in a triangle is  $180^\circ$ . Thus, angle  $C = 80^\circ$

5. If  $AB = AC$  in  $\triangle ABC$ , then what can be concluded about the angles of  $\triangle ABC$ ?

- A.  $\angle A = \angle B$   
B.  $\angle B = \angle C$   
C.  $\angle C = \angle A$   
D.  $\angle A = 2\angle C$  (B)

**Explanation:** In an isosceles triangle, the angles opposite the equal sides are equal. Therefore,  $\angle B = \angle C$ .

6. Which of the following is true about the angles opposite equal sides in a triangle?

- A. They are always complementary  
B. They are equal  
C. They are unequal  
D. They are supplementary (B)

**Explanation:** The angles opposite equal sides of a triangle are always equal, according to the properties of isosceles triangles.

7. If the line segment  $AB$  is parallel to line segment  $CD$  and  $AB = CD$ , what can be concluded about the angles of the triangles formed?

- A. The angles will be complementary  
B. The angles opposite to the equal sides will be equal  
C. The triangles will be similar but not congruent  
D. The triangles will be congruent (D)

**Explanation:** If  $AB$  is parallel to  $CD$  and  $AB = CD$ , the triangles formed will be congruent by the criteria for congruence (SSS or SAS).

8. In the congruence of triangles, if two angles and the included side of one triangle are equal to the corresponding angles and side of another triangle, which congruence criterion applies?

- A. SAS (Side Angle Side)  
B. ASA (Angle Side Angle)  
C. AAS (Angle Angle Side)  
D. SSS (Side Side Side) (B)

**Explanation:** The ASA criterion applies when two angles and the included side of one triangle are equal to the corresponding parts of another triangle.

9. In  $\triangle ABC$ , if  $AB = AC$  and  $\angle B = \angle C$ , what is the property of  $\triangle ABC$ ?

- A.  $\triangle ABC$  is an equilateral triangle  
B.  $\triangle ABC$  is a right triangle  
C.  $\triangle ABC$  is an isosceles triangle  
D.  $\triangle ABC$  is a scalene triangle (C)

**Explanation:** Since  $AB = AC$  and  $\angle B = \angle C$ ,  $\triangle ABC$  is an isosceles triangle.

10. In  $\triangle PQR$ , if  $\angle R = \angle P$  and  $QR = 4$  cm, and  $PR = 5$  cm, what is the length of  $PQ$ ?

- A. 2 cm  
B. 2.5 cm  
C. 4 cm  
D. 5 cm (C)

**Explanation:** Since  $\angle R = \angle P$ ,  $\triangle PQR$  is an isosceles triangle. Therefore,  $PQ = QR = 4$  cm.