

## CHAPTER-7 | Triangles

QUIZ  
PART-04

1. If two parallel lines  $l$  and  $m$  are intersected by two other parallel lines  $p$  and  $q$ , what can be concluded about  $\triangle ABC$  and  $\triangle CDA$ ?

- A.  $\triangle ABC \cong \triangle CDA$                       B.  $\triangle ABC \neq \triangle CDA$   
C.  $\triangle ABC$  is similar to  $\triangle CDA$   
D.  $\triangle ABC$  and  $\triangle CDA$  do not intersect (A)

**Explanation:** Since  $l$  and  $m$  are parallel, and  $p$  and  $q$  are also parallel, by the properties of parallel lines and transversals,  $\triangle ABC \cong \triangle CDA$  by the criteria of congruence.

Q2. If line  $l$  bisects  $A$  and point  $B$  lies on  $l$ , and  $BP$  and  $BQ$  are perpendiculars from  $B$  to the arms of  $\angle A$ , what can be concluded about  $\triangle APB$  and  $\triangle AQB$ ?

- A.  $\triangle APB \cong \triangle AQB$                       B.  $\triangle APB \neq \triangle AQB$   
C.  $\triangle APB$  is right-angle  
D.  $\triangle APB$  is isosceles (A)

**Explanation:** By the Angle Bisector Theorem and the criteria for congruence (ASA),  $\triangle APB \cong \triangle AQB$ .

3. If  $BP$  and  $BQ$  are perpendiculars from point  $B$  to the arms of  $\angle A$ , what can be concluded about  $BP$  and  $BQ$ ?

- A.  $BP = BQ$                                       B.  $BP \neq BQ$   
C.  $BP$  is greater than  $BQ$   
D.  $BP$  is less than  $BQ$  (A)

**Explanation:** Since  $BP$  and  $BQ$  are perpendiculars from the same point to the arms of  $A$ , and  $\triangle APB \cong \triangle AQB$ , we can conclude  $BP = BQ$ .

4. In the figure, if  $AC = AE$ ,  $AB = AD$ , and  $\angle BAD = \angle EAC$ , what can be concluded about  $BC$  and  $DE$ ?

- A.  $BC = DE$                                       B.  $BC \neq DE$   
C.  $BC$  is greater than  $DE$   
D.  $BC$  is less than  $DE$  (A)

**Explanation:** Using the congruence of triangles and the criteria of congruence (SSS), we can conclude that  $BC = DE$ .

5. If  $AC = AE$ ,  $AB = AD$ , and  $\angle BAD = \angle EAC$ , what congruence criterion applies to  $\triangle ABC$  and  $\triangle ADE$ ?

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

**Explanation:** The SAS congruence rule applies because two sides and the included angle of  $\triangle ABC$  are equal to the corresponding parts of  $\triangle ADE$ .

6. In the figure, if  $\triangle APB \cong \triangle AQB$ , what can be concluded about the angles?

- A.  $\angle APB = \angle AQB$   
B.  $\angle APB \neq \angle AQB$   
C.  $\angle APB = 90^\circ$   
D.  $\angle APB$  and  $\angle AQB$  are complementary (A)

**Explanation:** If the triangles  $\triangle APB$  and  $\triangle AQB$  are congruent, their corresponding angles must be equal, so  $\angle APB = \angle AQB$ .

7. In the congruence of  $\triangle ABC$  and  $\triangle ADC$ , which sides and angles are equal?

- A.  $AB = AC$ ,  $\angle ABC = \angle ADC$   
B.  $AB = AD$ ,  $\angle ABC = \angle ADC$   
C.  $AC = AE$ ,  $\angle ABC = \angle EAC$   
D.  $AB = AE$ ,  $\angle ABC = \angle EAC$  (B)

**Explanation:** In congruent triangles  $\triangle ABC$  and  $\triangle ADC$ , the sides  $AB = AD$  and the angles  $\angle ABC = \angle ADC$ .

8. Which of the following is a valid congruence criterion for triangles?

- A. SSA (Side Side Angle)  
B. SAS (Side Angle Side)  
C. AAS (Angle Angle Side)  
D. Both B and C (D)

**Explanation:** Both SAS (Side Angle Side) and AAS (Angle Angle Side) are valid congruence criteria for triangles.

9. What can be concluded from the property that the perpendiculars from a point on the bisector of an angle to its arms are equal?

- A. The triangles formed are congruent  
B. The angle bisector divides the angle into two equal parts  
C. The perpendiculars are unequal  
D. None of the above (A)

**Explanation:** Since the perpendiculars are equal, the triangles formed are congruent by the criteria of congruence.

10. If two triangles are congruent by the SAS rule, what is true about the corresponding sides and angles?

- A. The corresponding sides are equal and the angles are unequal  
B. The corresponding sides and angles are both equal  
C. The corresponding sides are unequal and the angles are equal  
D. The corresponding angles are unequal and the sides are unequal (B)

**Explanation:** By the SAS rule, if two triangles are congruent, their corresponding sides and angles are both equal.