

## CHAPTER-6 | Lines and Angles

QUIZ  
PART-08

1. In the figure, if  $AB \parallel CD$ ,  $\angle APQ = 50^\circ$  and  $\angle PRD = 127^\circ$ , find the values of  $x$  and  $y$ .

- A.  $x = 37^\circ$   $y = 43^\circ$   
 B.  $x = 43^\circ$   $y = 37^\circ$   
 C.  $x = 45^\circ$   $y = 35^\circ$   
 D.  $x = 50^\circ$   $y = 40^\circ$  (B)

**Explanation:** By using the property of parallel lines and  $\angle$ s formed by a transversal, we can find that  $x = 43^\circ$  and  $y = 37^\circ$  based on the  $\angle$  relationships.

2. If  $AB \parallel CD$ ,  $EF \perp CD$ , and  $\angle GED = 126^\circ$ , find the values of  $\angle AGE$ ,  $\angle GEF$ , and  $\angle FGE$ .

- A.  $\angle AGE = 54^\circ$ ,  $\angle FGE = 60^\circ$   $\angle GEF = 66^\circ$   
 B.  $\angle AGE = 60^\circ$ ,  $\angle FGE = 54^\circ$   $\angle GEF = 66^\circ$   
 C.  $\angle AGE = 66^\circ$ ,  $\angle FGE = 60^\circ$   $\angle GEF = 54^\circ$   
 D.  $\angle AGE = 66^\circ$   $\angle FGE = 54^\circ$   $\angle GEF = 60^\circ$  (B)

**Explanation:** Using the property of perpendicular and parallel lines, we calculate the required  $\angle$ s:  
 $\angle AGE = 60^\circ$ ,  $\angle GEF = 66^\circ$ , and  $\angle FGE = 54^\circ$ .

3. In the figure, if  $PQ \parallel ST$  and  $\angle PQR = 110^\circ$ , what is the relationship between  $\angle QRS$  and  $\angle RST$ ?

- A.  $\angle QRS + \angle RST = 180^\circ$   
 B.  $\angle QRS + \angle RST = 90^\circ$   
 C.  $\angle QRS = 2\angle RST$   
 D.  $\angle QRS = 0^\circ$  (A)

**Explanation:** The sum of consecutive interior  $\angle$ s on the same side of the transversal is  $180^\circ$  when the lines are parallel.

4. If  $PQ \parallel ST$  and  $\angle PQR = 110^\circ$ , and  $\angle RST = 130^\circ$ , what is  $\angle QRS$ ?

- A.  $40^\circ$  B.  $50^\circ$   
 C.  $60^\circ$  D.  $70^\circ$  (A)

**Explanation:** Since the sum of consecutive interior  $\angle$ s is  $180^\circ$ , we subtract  $\angle PQR$  and  $\angle RST$  from  $180^\circ$ , resulting in  $\angle QRS = 40^\circ$ .

5. In the figure, if  $PQ \parallel RS$  and an incident ray  $AB$  strikes the mirror  $PQ$  at  $B$ , the reflected ray moves along the path  $BC$  and strikes the mirror  $RS$  at  $C$  and reflects back along  $CD$ . What can be concluded?

- A.  $AB \parallel CD$  B.  $AB \perp CD$   
 C.  $AB = CD$  D.  $AB$  and  $CD$  are skew lines

**Answer: A**

**Explanation:** According to the law of reflection, if  $AB$  strikes  $PQ$  and reflects at  $BC$ , and then strikes  $RS$  and reflects back along  $CD$ , it implies  $AB$  is parallel to  $CD$ .

6. If  $AB \parallel CD$  and the angle of incidence  $i_1 =$  angle of reflection  $r_1$ , and angle of incidence  $i_2 =$  angle of reflection  $r_2$ , what is the relationship between  $AB$  and  $CD$ ?

- A.  $AB$  is perpendicular to  $CD$   
 B.  $AB$  is parallel to  $CD$   
 C.  $AB$  and  $CD$  are skew lines  
 D.  $AB$  intersects  $CD$  at an acute angle (B)

**Explanation:** If the angle of incidence equals the angle of reflection for both mirrors, then the incident and reflected rays confirm that  $AB$  is parallel to  $CD$ .

7. In the figure, if  $PQ \parallel ST$  and  $\angle PQR = 110^\circ$ , what is the sum of  $\angle QRS$  and  $\angle RST$ ?

- A.  $80^\circ$   
 B.  $90^\circ$   
 C.  $100^\circ$   
 D.  $110^\circ$  (B)

**Explanation:** Since the sum of consecutive interior angles formed by a transversal cutting parallel lines is  $180^\circ$ , the sum of  $\angle QRS$  and  $\angle RST$  is  $90^\circ$ .

8. If  $AB \parallel CD$ ,  $EF \perp CD$ , and  $\angle GED = 126^\circ$ , what is  $\angle GEF$ ?

- A.  $54^\circ$   
 B.  $60^\circ$   
 C.  $66^\circ$   
 D.  $72^\circ$  (A)

**Explanation:** Since  $EF$  is perpendicular to  $CD$ ,  $\angle GEF$  forms a right angle, which is  $90^\circ$ . Using angle subtraction,  $\angle GEF = 54^\circ$ .

9. In the figure, if  $PQ \parallel RS$  and  $\angle PQR = 110^\circ$ , what is  $\angle QRS$ ?

- A.  $70^\circ$   
 B.  $80^\circ$   
 C.  $90^\circ$   
 D.  $100^\circ$  (A)

**Explanation:** Since the sum of adjacent interior angles is  $180^\circ$ ,  $\angle QRS$  is calculated by subtracting  $\angle PQR$  from  $180^\circ$ , which gives  $70^\circ$ .

10. In the figure, if  $PQ \parallel ST$ , and  $\angle PQR = 110^\circ$ , and  $\angle RST = 130^\circ$ , find  $\angle QRS$ .

- A.  $60^\circ$   
 B.  $50^\circ$   
 C.  $40^\circ$   
 D.  $30^\circ$  (C)

**Explanation:** The sum of the angles on the same side of the transversal is  $180^\circ$ , so  $\angle QRS = 180^\circ - (110^\circ + 130^\circ) = 40^\circ$ .