

# BHARATH COACHING CENTRE

9<sup>th</sup> CBSE

Mathematics

Total: 50

Lines and Angles

Time: 1.30Hrs

## SECTION – A

$5 \times 1 = 5$

1. The sum of the angles of the triangle is \_\_\_\_\_.
2. If the transversal is drawn to the parallel lines then their \_\_\_\_\_ angles will be equal.
3. If the two lines intersect each other, then \_\_\_\_\_ angles will be equal.
4. If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two \_\_\_\_\_ angles.
5. Co-interior angles are also known as \_\_\_\_\_.

## SECTION – B

$5 \times 2 = 10$

6. In fig 6 lines PQ and RS intersect each other at point O. if  $\angle POR : \angle ROQ = 5 : 7$ , find all the angles.
7. In fig 7, lines AB and CD intersect at O. If  $\angle AOC + \angle BOE = 70^\circ$  and  $\angle BOD = 40^\circ$ , find  $\angle BOE$  and reflex  $\angle COE$ .
8. In fig. 8,  $\angle PQR = \angle PRQ$ , then prove that  $\angle PQS = \angle PRT$ .
9. In fig 9, find the values of  $x$  and  $y$  and then show that  $AB \parallel CD$ .
10. In fig 10 if  $AB \parallel CD$ ,  $EF \perp CD$  and  $\angle GED = 126^\circ$ , find  $\angle AGE$ ,  $\angle GEF$ ,  $\angle FGE$ .

## SECTION – C

$5 \times 3 = 15$

11. In fig 11 ray OS stands on a line POQ. Ray OR and ray OT are angle bisectors of  $\angle POS$  and  $\angle SOQ$ , respectively. If  $\angle POS = x$ , Find  $\angle ROT$ .
12. The sum of the angles of the triangle is  $180^\circ$ .
13. In fig 13, if  $AB \parallel CD$ ,  $\angle APQ = 50^\circ$  and  $\angle PRD = 127^\circ$ , find  $x$  and  $y$ .
14. If a transversal intersects two lines, then each pair of alternate interior angles is equal.
15. It is given that  $\angle XYZ = 64^\circ$  and XY is produced to the point P. draw the figure from the given information. If ray YQ bisects  $\angle ZYP$ , find  $\angle XYQ$  and reflex  $\angle QYP$ .

## SECTION – D

$5 \times 4 = 20$

16. If a transversal intersects two lines such that the bisector of a pair of corresponding angles are parallel, then prove that the lines are parallel.
17. In Fig 17, OP, OQ, QR & OS are four rays. Prove that  $\angle POQ + \angle QOR + \angle SOR + \angle POS = 360^\circ$ .
18. In fig 18 the sides AB and AC of  $\triangle ABC$  are produced to points E and D respectively. If bisectors BO and CO of  $\angle CBE$  and  $\angle BCD$  respectively meet at point O, then prove that  $\angle BOC = 90^\circ - \frac{1}{2} \angle BAC$ .
19. In fig 19, the side QR of  $\triangle PQR$  is produced to a point S. if the bisectors of  $\angle PQR$  and  $\angle PRS$  meet at point T, then prove that  $\angle QTR = \frac{1}{2} \angle QPR$ .
20. In fig 20, if  $PQ \parallel ST$ ,  $\angle PQR = 110^\circ$  and  $\angle RST = 130^\circ$ , find  $\angle QRS$ .

