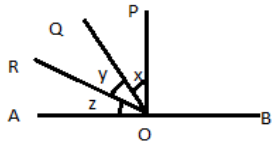
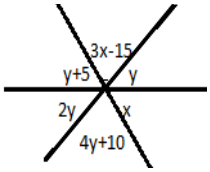
MATHEMATICS-IX

Lines and Angles

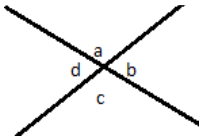
1. In the given figure PO is perpendicular to AB. If x: Y: Z = 1:3:5,then find the degree measure of x,y & z.



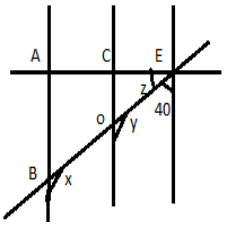
2. Prove that if two lines intersect each other, then the vertically opposite angles are equal.
3. In the figure if y =20^0, prove that the line AOB is a straight line.



4. Two complementary angles are such that two times the measure of one angle is equal to three times the measure of the other .Find the measure of the larger angle.ss
5. Find the supplement of 4/3 of right angle.
6. If (3x-58^0) &(x+38^0) are supplementary angles. Find x & the angles.
7. Out of the four angles formed by two intersecting lines, one is 90^0. Prove that the other three angles will be 90^0 each.
8. Lines PQ &RS intersect each other at O. If ∠POR:∠ROQ =3:7.Find the angles a, b, c & d.

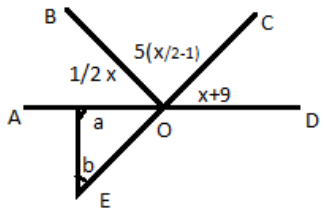


9. If two lines are perpendicular to the same line. Prove that they are parallel to each other.
10. If l,m,n are three lines such that l is parallel to m & n is perpendicular to l , then prove that n is perpendicular to m.
11. In figure AB||CD & CD||EF. ALSO EA is perpendicular to AB. If ∠BEF=40^0.Then find x, y, z.

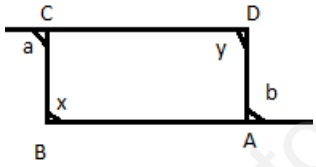


12. EF is a transversal to two parallel lines AB& CD .GM & HL are the bisectors of the corresponding angles∠ EGB &∠EHD. Prove that GM||HL.

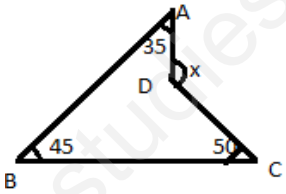
13. AB & CD are the bisectors of the two alternate interior angles formed by the intersection of a transversal 't' with parallel lines 'l' & 'm'.Show that AB||CD.
14. Prove that if one angle of a triangle is equal to the sum of the other two angles, the triangle is right angled triangle.
15. The degree measures of three angles of a triangle are x, y & z. If z= $\frac{x+y}{2}$, then find the value of z.
16. In the given figure find a+b.



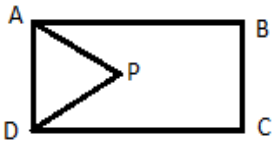
17. The sides BA & DC of a quadrilateral ABCD are produced as shown in figure. Show that $\angle x + \angle y = \angle a + \angle b$.



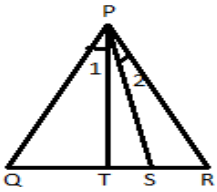
18. In figure, find the value of x.



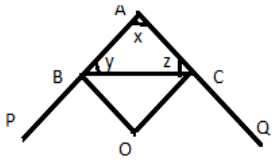
19. In figure AP &DP are bisectors of two adjacent angles A & D of a quadrilateral ABCD .Prove that $2\angle APD = \angle B + \angle C$.



20. If the side BC of a triangle ABC is produced to D. The bisectors of $\angle BAC$ intersects the side BC at E. Prove that $\angle ABC + \angle ACD = 2\angle AEC$.
21. Prove that the sum of the angles of a hexagon is 720^0.
22. In figure PS is the bisector of $\angle QPR$ & PT is perpendicular to QR. Show that $\angle TPS = \frac{1}{2}(\angle Q - \angle R)$.



23. Two parallel lines are intersected by a transversal. Then, prove that the bisector of two pair of interior angles enclose a rectangle.
24. The bisectors of ∠ABC & ∠BCA intersect each other at point O. Prove that ∠BOC = 90^0+1/2∠A.
25. The sides AB & AC of a triangle ABC are produced to point E &D respectively. If bisectors BO & CO of ∠CBE & ∠BCD respectively meet at point O, then prove that ∠BOC = 90^0- ½ ∠BAC.
26. The side AB & AC of triangle ABC are produced to points P & Q respectively. If bisectors BO & CO of ∠CBP & ∠BCQ respectively meet at O, then prove that ∠BOC = ½(y+z).



27. ABCD is a quadrilateral & bisectors of ∠A & ∠D meet at O. Prove that ∠AOD =1/2(∠B+∠C).
28. What is the value of y, if P & q are parallel to each other?