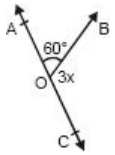
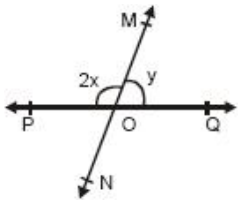
Ch-6 Lines and Angles

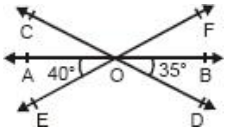
1. In the given figure, AOC is a line, find x.



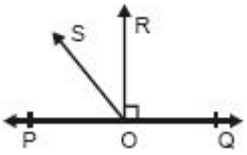
2. In the given figure, PQ and MN intersect at O.
   a. Determine y, when x = 60°.
   b. Determine x, when y = 40°.



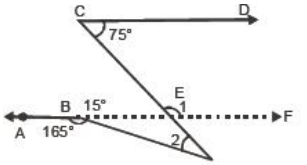
3. In the given figure, lines Ab, CD and EF intersect at O. Find the measure of ∠AOC, ∠COF.



4. The exterior angles obtained on producing the base of a triangle both ways are 100° and 120°. Find all the angles.
5. ΔABC is right angled at A and AL ⊥ BC. Prove that ∠BAL = ∠ACD.
6. If two parallel lines are intersected by a transversal, prove that the bisectors of the two pairs of interior angles enclose a rectangle.
7. The angles of a triangle are arranged in ascending order of magnitude. If the difference between two consecutive angles is 10°, find all the three angles.
8. In the given figure, POQ is a line. Ray OR ⊥ PQ, OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.



9. Can a triangle have two obtuse angles? Give reason for your answer.
10. How many triangles can be drawn having its angles as 45°, 64° and 72°? Give reason for your answer.
11. In the following figure AB || CD. Find the measure of ∠BOC.



12. Find the complement of 36°.
13. Find the measure of an angle which is 26° more than its complement.
14. If a ray CD stands on a line AB, then prove that ∠ACD = ∠BCD = 180°.
15. If two lines intersect each other, then prove that ∠AOD = ∠BOC.
16. If PQ and RS are two intersecting lines which meet at point O and if ∠POR : ∠ROQ = 5 : 7. Find all the angles.
17. Prove that the angle formed by the bisector of interior angle A and the bisector of exterior angle B of a triangle ABC is half of angle C.
18. Sides QP and RQ of triangle PQR are produced to point S and T respectively. If ∠SPR = 35° and ∠PQT = 70°, find ∠SQR and ∠PRQ.
19. Of the three angles of a triangle, one is double the smallest and another is 3 times the smallest. Find the angles.

20. Two adjacent angles on a straight line are in the ratio 2:3. Find the measures of each one of these angles.
21. If two lines intersect each other, then show that the vertically opposite angles are equal.
22. If parallel lines are intersected by the transversal, prove that the bisectors of the two pairs of interior angles enclose a rectangle.
23. If the arms of an angle are respectively parallel to the arms of another angle, prove that the two angles are equal or complementary.
24. In a ΔABC, if the sum of $\angle A$ and $\angle B$ is 150^o, and $\angle B$ and $\angle C$ is 100^o. What is the measure of each angle.