TRIANGLES

1. Line segment joining the mid point of any side with the opposite vertex is
(a) altitude (b) median c) perpendicular bisector (d) angle bisector

2. The length of perpendicular drawn from the opposite vertex to any side is
(a) altitude (b) median c) perpendicular bisector (d) angle bisector

3. The point of intersection of all the altitudes of a triangle is
(a) orthocentre (b) incentre c) circumcentre (d) centroid

4. The point of intersection of the perpendicular bisector of all sides of a triangle is
(a) orthocentre (b) incentre c) circumcentre (d) centroid

5. In a triangle, the angle opposite to the longest side is:
(a) greater than 60^0 (b) measure of 50^0
(c) greater than 90^0 (d) none of these

6. The point of intersection of all the medians of a triangle is
(a) orthocentre (b) incentre c) circumcentre (d) centroid

7. In a triangle ABC, if $2\angle A = 3\angle B = 6\angle C$, then the measure of $\angle A$ is
(a) 30^0 (b) 75^0 c) 90^0 (d) 60^0

8. In a triangle ABC, if $2\angle A = 3\angle B = 6\angle C$, then the measure of $\angle B$ is
(a) 30^0 (b) 75^0 c) 90^0 (d) 60^0

9. In a triangle ABC, if $2\angle A = 3\angle B = 6\angle C$, then the measure of $\angle C$ is
(a) 30^0 (b) 75^0 c) 90^0 (d) 60^0

10. In a triangle ABC, if $\angle A - \angle B = 33^0$ and $\angle B - \angle C = 18^0$, then the measure of $\angle A$ is
(a) 88^0 (b) 55^0 c) 37^0 (d) 60^0

11. In a triangle ABC, if $\angle A - \angle B = 33^0$ and $\angle B - \angle C = 18^0$, then the measure of $\angle B$ is
(a) 88^0 (b) 55^0 c) 37^0 (d) 60^0

12. In a triangle ABC, if $\angle A - \angle B = 33^0$ and $\angle B - \angle C = 18^0$, then the measure of $\angle C$ is
(a) 88^0 (b) 55^0 c) 37^0 (d) 60^0

13. In a triangle ABC, if $\angle A + \angle B = 65^0$ and $\angle B + \angle C = 140^0$, then the measure of $\angle A$ is
(a) 40^0 (b) 25^0 c) 115^0 (d) 60^0

14. In a triangle ABC, if $\angle A + \angle B = 65^0$ and $\angle B + \angle C = 140^0$, then the measure of $\angle B$ is
(a) 40^0 (b) 25^0 c) 115^0 (d) 60^0

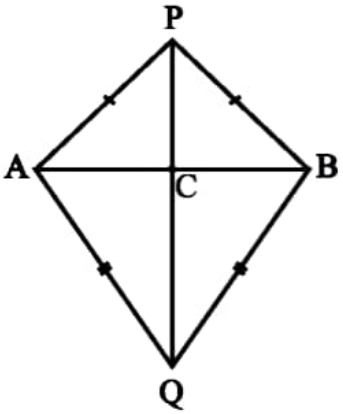
15. In a triangle ABC, if $\angle A + \angle B = 65^0$ and $\angle B + \angle C = 140^0$, then the measure of $\angle C$ is
(a) 40^0 (b) 25^0 c) 115^0 (d) 60^0

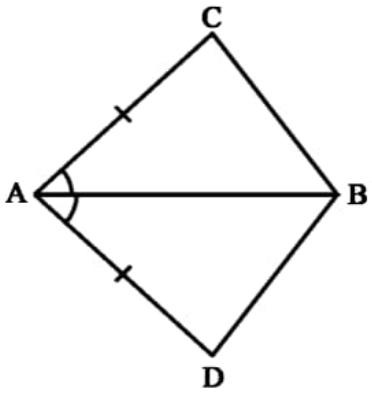
37. AD is an altitude of an isosceles triangle ABC in which AB = AC. Show that (i) AD bisects BC (ii) AD bisects ∠A.

38. AB is a line segment and line *l* is its perpendicular bisector. If a point P lies on *l*, show that P is equidistant from A and B.

39. ABC is a right angled triangle in which ∠A = 90° and AB = AC. Find ∠B and ∠C.

40. AB is a line-segment. P and Q are points on opposite sides of AB such that each of them is equidistant from the points A and B(see in the below left figure). Show that the line PQ is the perpendicular bisector of AB.

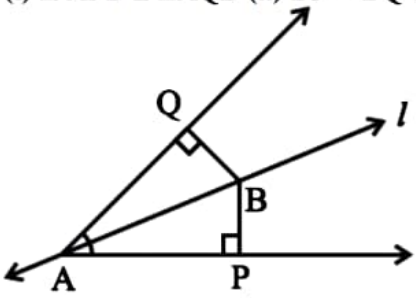


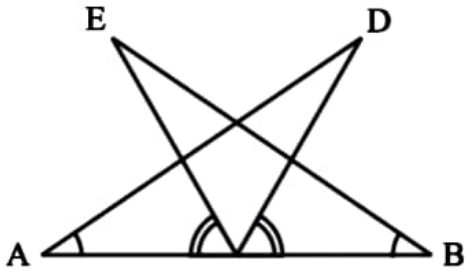


41. In quadrilateral ACBD, AC = AD and AB bisects ∠A (see the above right sided Fig.). Show that Δ ABC≅Δ ABD. What can you say about BC and BD?

42. In an isosceles triangle ABC, with AB = AC, the bisectors of ∠ B and ∠C intersect each other at O. Join A to O. Show that : (i) OB = OC (ii) AO bisects ∠A

43. Line *l* is the bisector of an angle ∠A and B is any point on *l*. BP and BQ are perpendiculars from B to the arms of ∠A (see the above side figure). Show that:
(i) Δ APB ≅ ΔAQB (ii) BP = BQ or B is equidistant from the arms of ∠A.



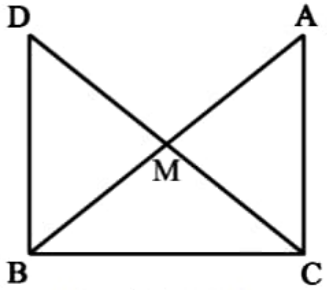


44. AB is a line segment and P is its mid-point. D and E are points on the same side of AB such that ∠BAD = ∠ABE and ∠EPA = ∠DPB (see the above right sided figure). Show that (i) ΔDAP ≅ ΔEBP (ii) AD = BE

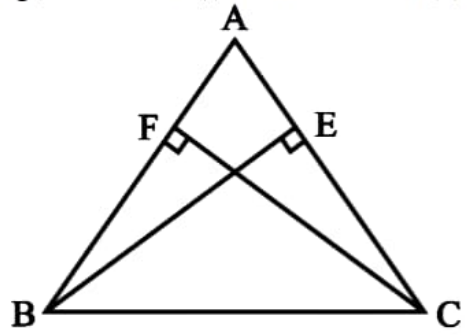
45. BE and CF are two equal altitudes of a triangle ABC. Using RHS congruence rule, prove that the triangle ABC is isosceles.

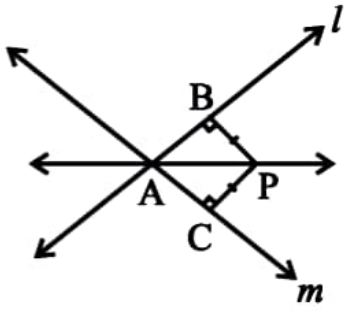
47. In right triangle ABC, right angled at C, M is the mid-point of hypotenuse AB. C is joined to M and produced to a point D such that DM = CM. Point D is joined to point B (see the above side figure). Show that:

(i) $\Delta AMC \cong \Delta BMD$ (ii) $\angle DBC$ is a right angle. (iii) $\Delta DBC \cong \Delta ACB$ (iv) $CM = \frac{1}{2} AB$



48. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal (see the below Fig.). Show that (i) $\Delta ABE \cong \Delta ACF$ (ii) AB = AC, i.e., ABC is an isosceles triangle.

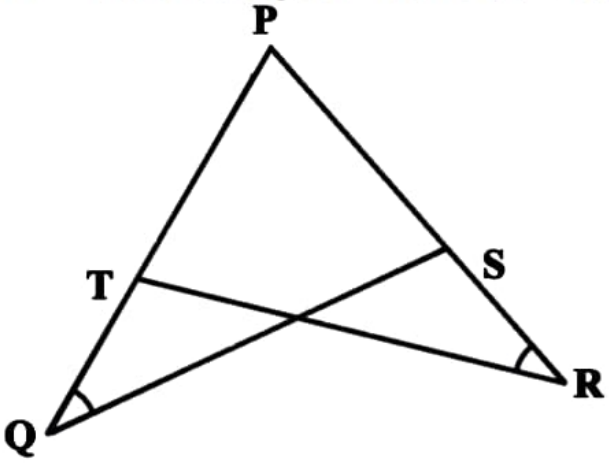


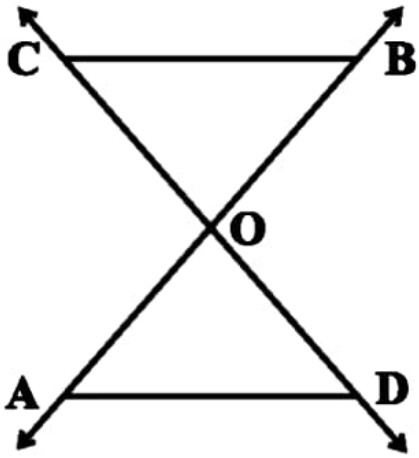


49. P is a point equidistant from two lines *l* and *m* intersecting at point A (see the above right side figure). Show that the line AP bisects the angle between them.

50. The angles of triangle are $(x + 10^0)$, $(2x - 30^0)$ and x^0. Find the value of x.

51. In the below Fig, PQ = PR and $\angle Q = \angle R$. Prove that $\Delta PQS \cong \Delta PRT$.





52. In the above right sided Figure, two lines AB and CD intersect each other at the point O such that BC || DA and BC = DA. Show that O is the midpoint of both the line-segments AB and CD.

53. ABC is an isosceles triangle with AB = AC and BD and CE are its two medians. Show that BD = CE.