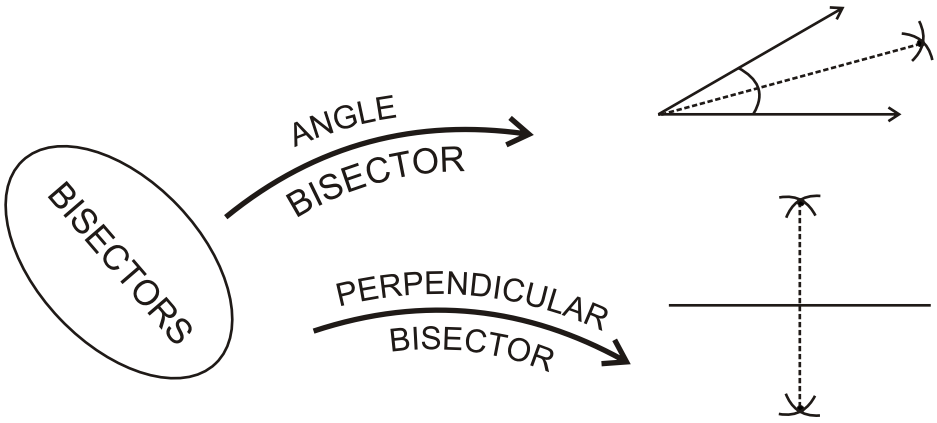
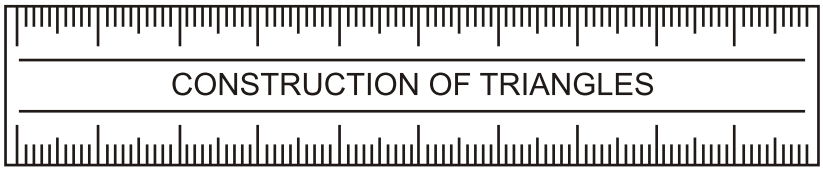
CHAPTER-11

CONSTRUCTIONS

KEY POINTS





BASE, BASE ANGLE & Sum of Two OTHER SIDE

BASE, BASE ANGLE & DIFFERENCE OF OTHER TWO SIDE

TWO BASE ANGLES & PERIMETER

KEY-POINTS

1. Angle-bisector : A line segment that divides the given angle into half i.e two equal parts.
2. Perpendicular - bisector : A line segment that divides the given line segment into two equal parts.
3. Angles of 60° and 120° can be constructed directly with compass without bisecting.
4. When we bisect a given angle, we get half of it i.e. when we bisect 30°, we get 15° angle.
5. Some angles can be obtained by bisecting two angles, like

Angles to be bisected	Angle obtained
30° and 60°	45°
120° and 180°	150°
60° and 90°	75°
90° and 120°	105°

VERY-VERY SHORT ANSWER QUESTIONS (1 MARK)

1. What is the angle bisector of 50° ?
2. The perpendicular - bisector divides a line segment of 8cm into two parts of _____ cm. each.
3. We have to bisect _____ and _____ to get an angle of 135° in between them.
4. A perpendicular - bisector divides a line – segment into _____.
5. Which angle will be obtained in between by bisecting angles 60° and 90° ?

VERY SHORT ANSWER QUESTION (2 MARKS)

6. Draw perpendicular bisector of AB = 6.4cm.
7. Construct an angle of 15° using compass.
8. Construct an angle of 90° using compass.

SHORT ANSWER QUESTION (3 MARKS)

9. Draw a line segment of 7.2cm and bisect it. Also measure each part.
10. Draw a line segment PQ = 8cm. Draw a perpendicular at P.
11. Draw a line AB = 7.9cm and draw perpendicular at A and B. Are these two perpendiculars parallel to each other ?
12. Draw $\angle ABC = 32^{\circ}$ using protractor. Construct another angle equal to $\angle ABC$ using compass.
13. Draw a line segment XY = 12.4cm. Find $\frac{1}{4}$ XY using rular and compass. Verify the same using scale.
14. Construct an equilateral triangle the sum of its two sides is 10cm.

LONG ANSWER QUESTIONS (5 MARKS)

15. Construct ΔXYZ in which XY = 4.5 cm, YZ = 5.0 cm. and ZX = 6.0 cm. Also draw angle bisector of largest angle.

16. Construct an equilateral triangle of side 6 cm and label its vertices as P, Q and R. From point Q draw a median QT.

17. Construct a right triangle ABC, $\angle B = 90^0$, AB + AC = 10 cm., BC = 6 cm.

18. Construct a ΔPQR in which QR = 7 cm, $\angle Q = 75^0$ and PQ + PR = 13 cm.

19. Construct a ΔPQR in which QR = 6 cm, $\angle Q = 30^0$ and PQ – PR = 3 cm.

20. Construct a ΔXYZ in which YZ=4.1 cm, $\angle Y=45^0$, and XY + XZ = 6.7 cm.

21. Construct a ΔPQR in which QR = 5 cm, $\angle R=45^0$ and PR-PQ = 1.6 cm.

22. Construct a ΔXYZ in which $\angle Y = 30^0$, $\angle Z = 90^0$ and XY + YZ + ZX = 11cm.

23. Construct a triangle ABC in which $\angle B = 45^0$, $\angle C=60^0$ and the perpendicular from the vertex A to the base BC is 4.5 cm.

24. Construct a triangle with perimeter 12 cm and ratio of their angles are 3 : 4 : 5.

25. Government wish to make an old age home of right triangular shape. If one side is 13m and sum of hypotenuse and other side is 15 m then

    Construct the triangle taking measurement in cm.

26. Eco club of a school created a triangular park ΔABC to maintain greenery of the school. If BC = 7m, $\angle B=75^0$, AB + AC = 13m then

    Construct ΔABC taking measurement in cm.

27. Construct a triangle DEF in which DE = 5 cm, $\angle D = 120°$ and EF – DF = 3.6 cm.

28. Construct a right angled triangle with base 5.4 cm and difference of hypotenuse and perpendicular is 1.9 cm.

29. Construct a triangle PQR with PQ = 5 cm. $\angle P = 105°$ and PR + QR = 8 cm.

30. Construct a triangle whose perimeter is 11.9 cm and base angles are 80° and 60°.

31. Construct an isosceles triangle XYZ with YZ = ZX = 8 cm. and median YT = 4 cm.

Hint & Answers

1. 25°
2. 4°
3. 120° & 150° and other suitable answers
4. two equal parts
5. 75°