

CHAPTER : 11 CONSTRUCTIONS

MIND MAPS LEARNING MADE SIMPLE

To draw geometrical shapes using compasses, ruler etc

Given: Circle with centre O and point P outside it.

Step 1. Join PO and bisect it at mid-point M

Step 2. M as centre and radius = MO draw a circle, intersecting given circle at Q and R

Step 3. Join PQ and PR, required tangents to the circle

Tangent to circle

Construct a triangle similar to a given ΔABC with sides $\frac{3}{4}$ of the corresponding sides of ΔABC

1. Draw any ray BX making an acute angle with BC

2. Locate 4 points (greater of 3 and 4 in $\frac{3}{4}$) on BX at equal distance from each other ($BB_1 = B_1B_2 = B_2B_3 = B_3B_4$) Join B_4C

3. Draw line parallel to B_4C from B_3 intersecting BC at C' . Draw line $\parallel$ to AC from C' intersecting AB at A' . $A'B'C'$ is the required triangle

Triangle similar to given triangle

Definition

Line Segment Division of line in ratio's

Method 1
Given: Line segment, ratio (3 : 2).

Step 1. Draw any ray AX, Making acute angle with line segment AB

Step 2. Locate 5 points A_1, A_2, A_3, A_4, A_5 at equal distances ($A_1A_2 = A_2A_3 = A_3A_4 = A_4A_5$). Join BA_5

Step 3. Through A_3 ($m = 3$), draw line parallel to BA_5 cutting AB at C. $AC : CB = 3 : 2$

Method 2
Given: Line segment, ratio (3 : 2)

1. Draw any ray AX making an acute angle with line segment AB

2. Draw ray BY $\parallel$ AX

3. Locate A_1, A_2, A_3 ($m = 3$) on AX and B_1, B_2 ($n = 2$) on BY. Join A_3B_2 , intersecting AB at C. $AC : CB = 3 : 2$