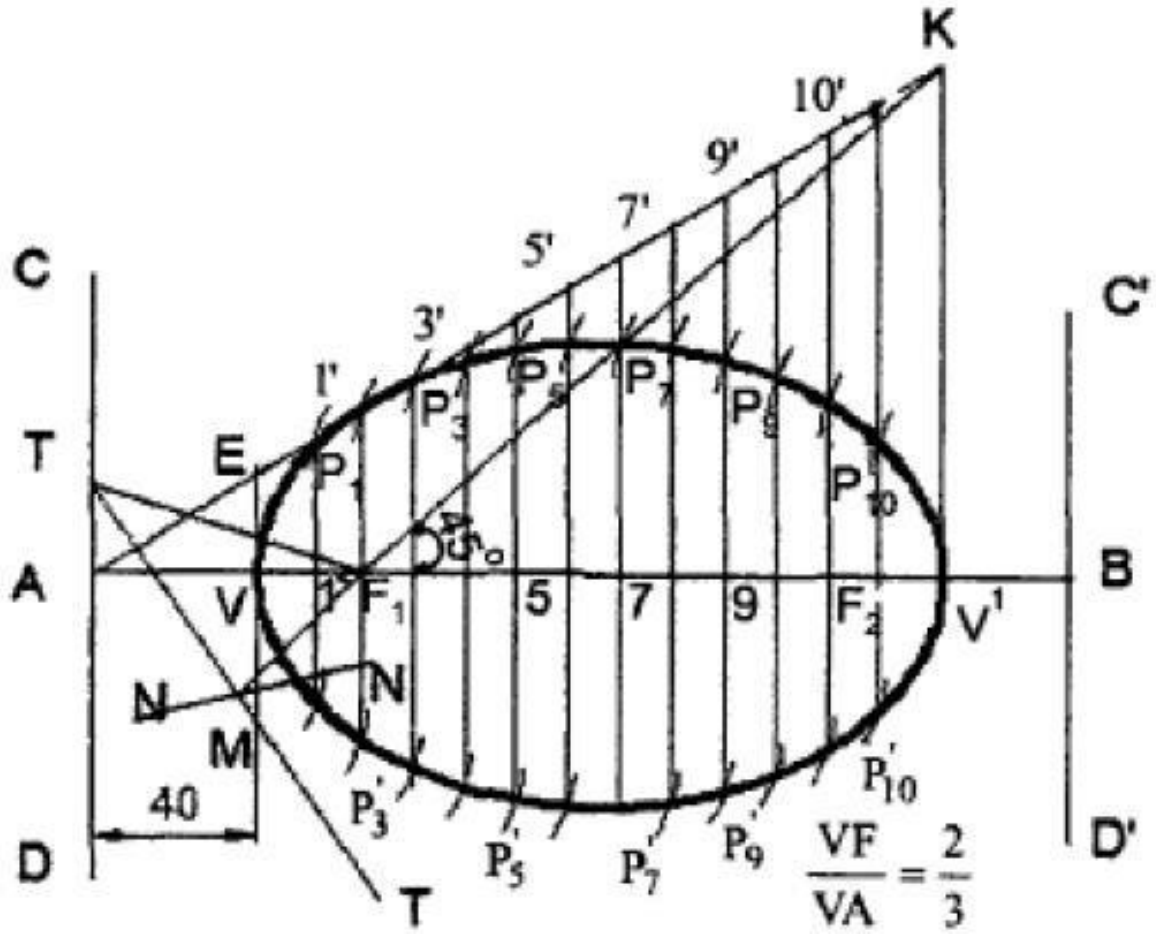
I CONSTRUCTION OF ELLIPSE BY ECCENTRICITY METHOD

EXAMPLE 1

To draw an ellipse with the distance of the focus from the directrix at 50mm and eccentricity = 2/3 (Eccentricity method)

Construction:

1. Draw any vertical line CD as directrix.
2. At any point A in it, draw the axis.
3. Mark a focus F on the axis such that AF1=50mm.
4. Divide AF1 in to 5 equal divisions.
5. Mark the vertex V on the third division-point from A.
6. Thus eccentricity e= VF1/VA = 2/3.
7. A scale may now be constructed on the axis which will directly give the distances in the required ratio.
8. At V, draw a perpendicular VE = VF1. Draw a line joining A and E.
9. Mark any point 1 on the axis and through it draw a perpendicular to meet AE produced at 1'.
10. With centre F and radius equal to 1-1', draw arcs to intersect a perpendicular through 1 at points P1 and P'1.
11. Similarly mark points 2, 3 etc. on the axis and obtain points P2 and P'2, P3 and P'3, etc.
12. Draw the ellipse through these points, it is a closed curve two foci and two directrices.


K
10'
9'
7'
5'
3'
1'
C
C'
T
E
A
B
V
F1
5
7
9
F2
V1
N
M
40
D
D'
T
VF/VA = 2/3