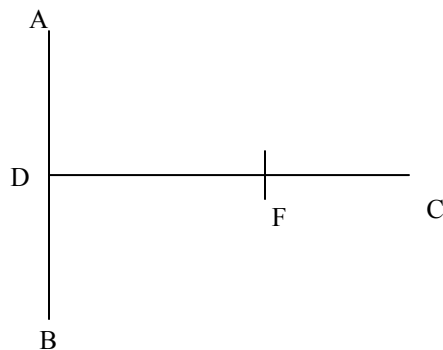


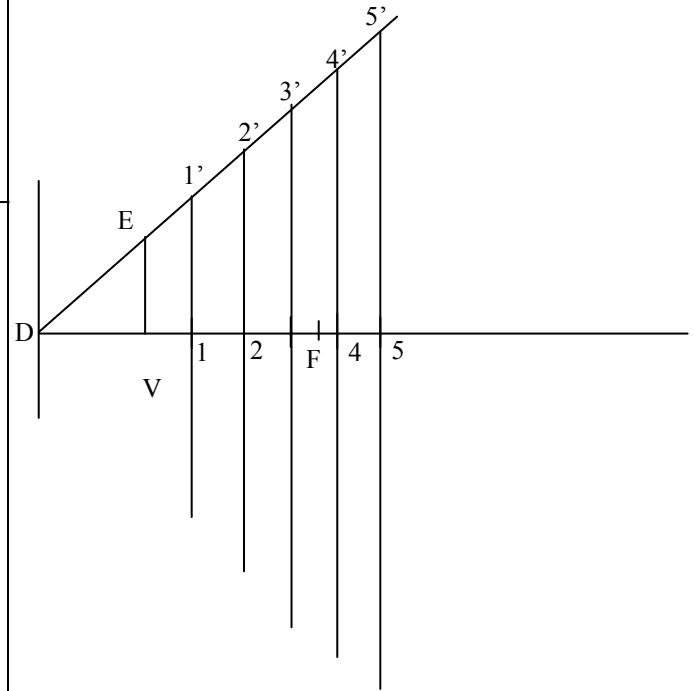
Q) A **fixed point** is 50 mm away from a **fixed line**. Draw the path traced by a point P moving such that its distance from the **fixed line** is **equal** to its distance from the **fixed point**. Also draw **tangent** and **normal** to the curve at a point 65 mm from the directrix.

A) The fixed point is the focus and the fixed line is the directrix. The ratio is given as **PD= PF** from which **e= PF/PD=1**. Hence the curve is a parabola with **e=1/1**.

1) Given data: **DF = 50; e=1/1(m/n)**.
Draw AB (Directrix), CD (Axis) and Mark DF=50. (AB and CD are of any lengths).

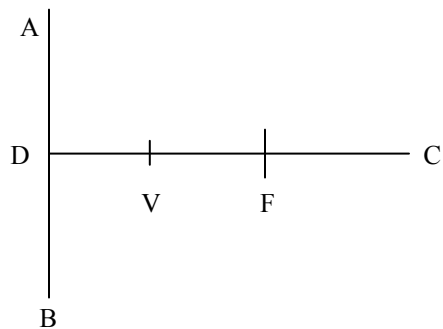


R)
S)

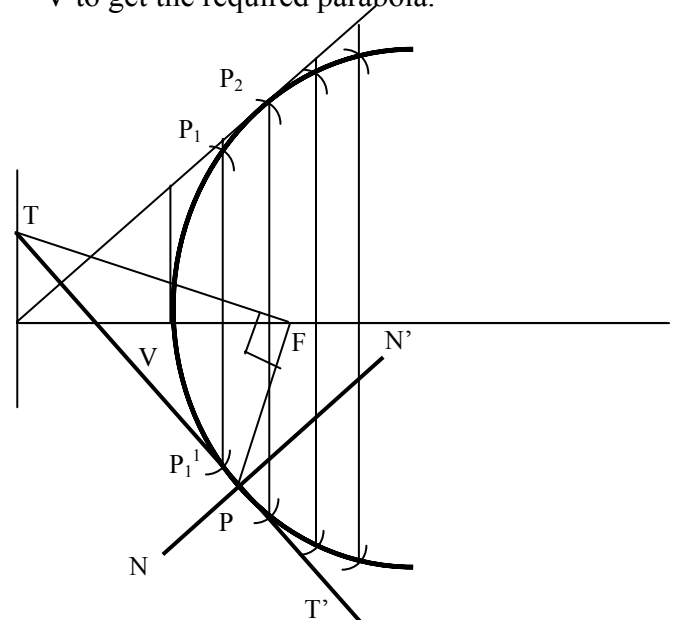


T)
U)

2) Divide DF into **1+1=2** parts. Mark V at 1st part after F.
(Divide DF into **(m+n)** no.of parts. Mark **V** at **mth** part **after F**).



5) With **Centre as F** & **Radius =1-1'**, cut arc on line 1-1' above and below to get P₁, P₁'. Similarly get the other points using 2-2', 3-3', etc. Join all points from V to get the required parabola.



3) Draw **VE=VF**; VE is vertical line.

