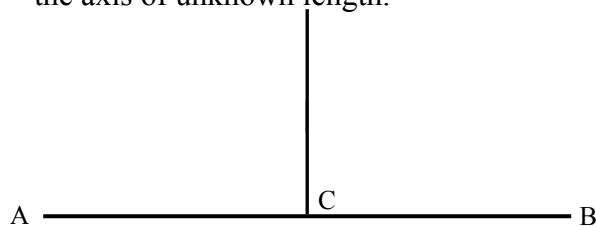


**Q)** A fountain jet discharges water at an angle of  $45^\circ$  to the horizontal. It travels a maximum horizontal distance of **8.5 meters** & falls on the ground. Trace the path of the jet, assuming it to be parabolic.

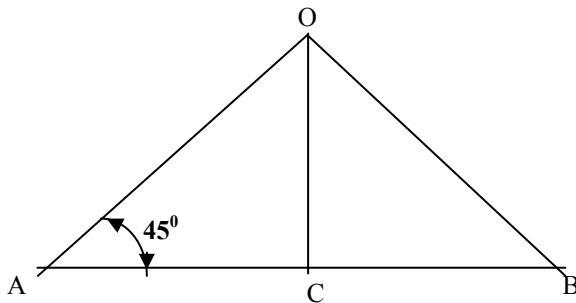
**Ans)** The path of the ball is a parabola & is to be drawn by tangent method (in a triangle).

**Base AB=85 mm; Angle =  $45^\circ$ .**

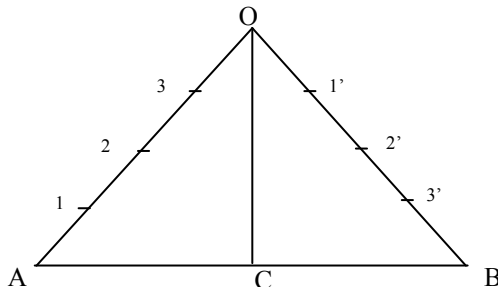
1) Draw base AB=85, & at mid point C, draw the axis of unknown length.



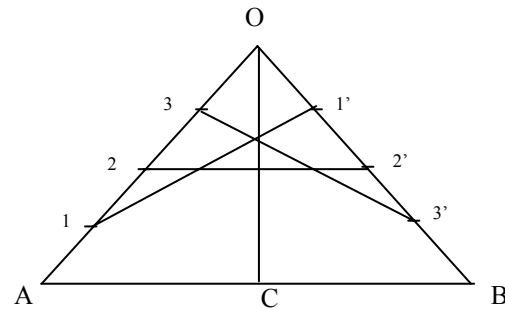
2) At A, draw a line at  $45^\circ$  to cut axis line at O. Join AO & BO.



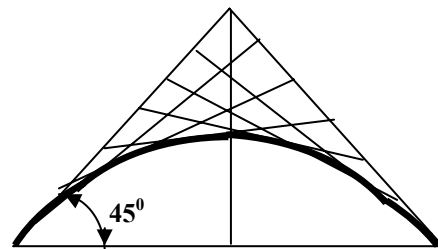
3) Divide AO & BO into same no.of equal parts & label them as 1,2,3.. & 1',2',3'...



4) Join points 1-1', 2-2', 3-3', etc to get tangents of the parabola.



5) Draw a parabola such that it touches these lines externally only at one point so that the lines are tangents to the parabola.



This method is called as tangent method.

$$\begin{aligned} \text{Scale} &= 85 \text{ mm} / 8.5 \text{ m} \\ &= 85 \text{ mm} / (8.5 \times 1000) \text{ mm} \\ &= 1/100. \end{aligned}$$

**Hence at the end of problem, mention the scale as 1/100.**

Dimensioning is to be done as usual.