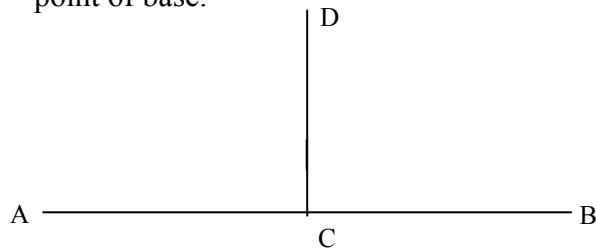


**Q)** A ball is thrown from a ground, travels a maximum **horizontal distance** of **8.5 meters** & reaches a **maximum height** of 5.0 meters. Trace the path of the ball, assuming it to be parabolic.

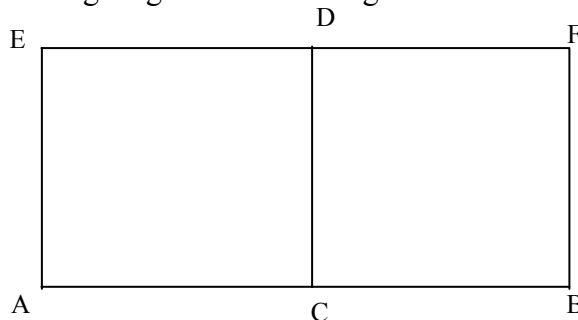
**Ans)** The path of the ball is a parabola & is to be drawn by oblong method (in a rectangle).

**Base AB=85 mm; Axis (CD) = 50 mm**

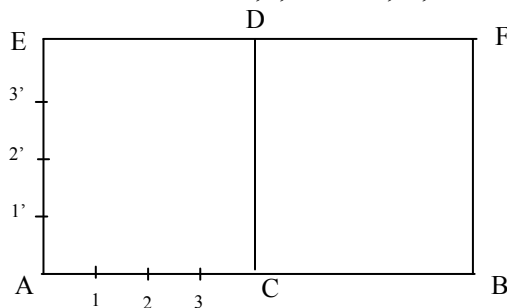
1) Draw base AB=85, & axis CD = 50 at mid point of base.



2) Construct a rectangle on ABCD by taking length as 85 and height as 50.

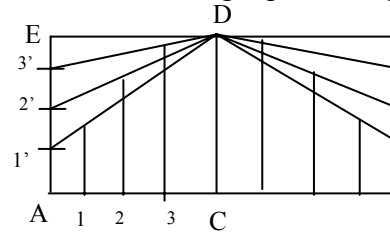


3) Divide AC & AE into same no. of equal parts & label them as 1,2,3.. & 1',2',3'...



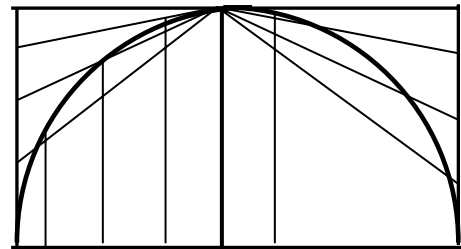
**In this Oblong method, the parabola is obtained in two equal parts of rectangle by symmetry. So it is constructed in two stages, the left half & right half.**

4) Join D to 1', 2', 3'. From 1, 2, 3.. of AC, draw vertical lines directly to cut the lines D-1', D-2' & D-3' to get points of parabola.



Repeat in the other half of rectangle to get the required parabola.

5) **Completed parabola.**



**Since the parabola has been drawn by using a rectangle, it is also sometimes called as parabola inscribed in a rectangle.**

**Scale:** In the question, the dimensions have been given as 8.5 meters and 5.0 meters. We have to convert it into mm and hence a scale has to be mentioned at the end of this problem.

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

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

Give the dimensions as per the usual rules.