

1. Exercise : 2

2. Date: 12th Oct. 2020

3. Title : Conic and special curves.

4. Aim : To understand and draw conic curves, and special curves like cycloid, involute, and Archimedean spiral.

5. Software used: Auto CAD

6. Introduction:

i. About Conic curves:

→ A conic section is a curve obtained as the intersection of the surface of a cone with a plane. The three types of conic section are the hyperbola, the parabola, and the ellipse. The circle is type of ellipse, and is sometimes considered to be a fourth type of conic section. Conic section can be generated by intersecting a plane with a cone.

ii. About special curves:

→ There are many special curves as well i.e., spiral, screws, cylinder etc. which can formed using concepts of engineering graphics.

→ These are used in special artifacts, designs and various kind architecture exhibition model.

7. Procedure (for solving question #):

7.1 Question outline

: To draw parabola using Auto CAD.

7.2 Object

: Parabola.

7.3 Conditions (if any)

: Using rectangular method.

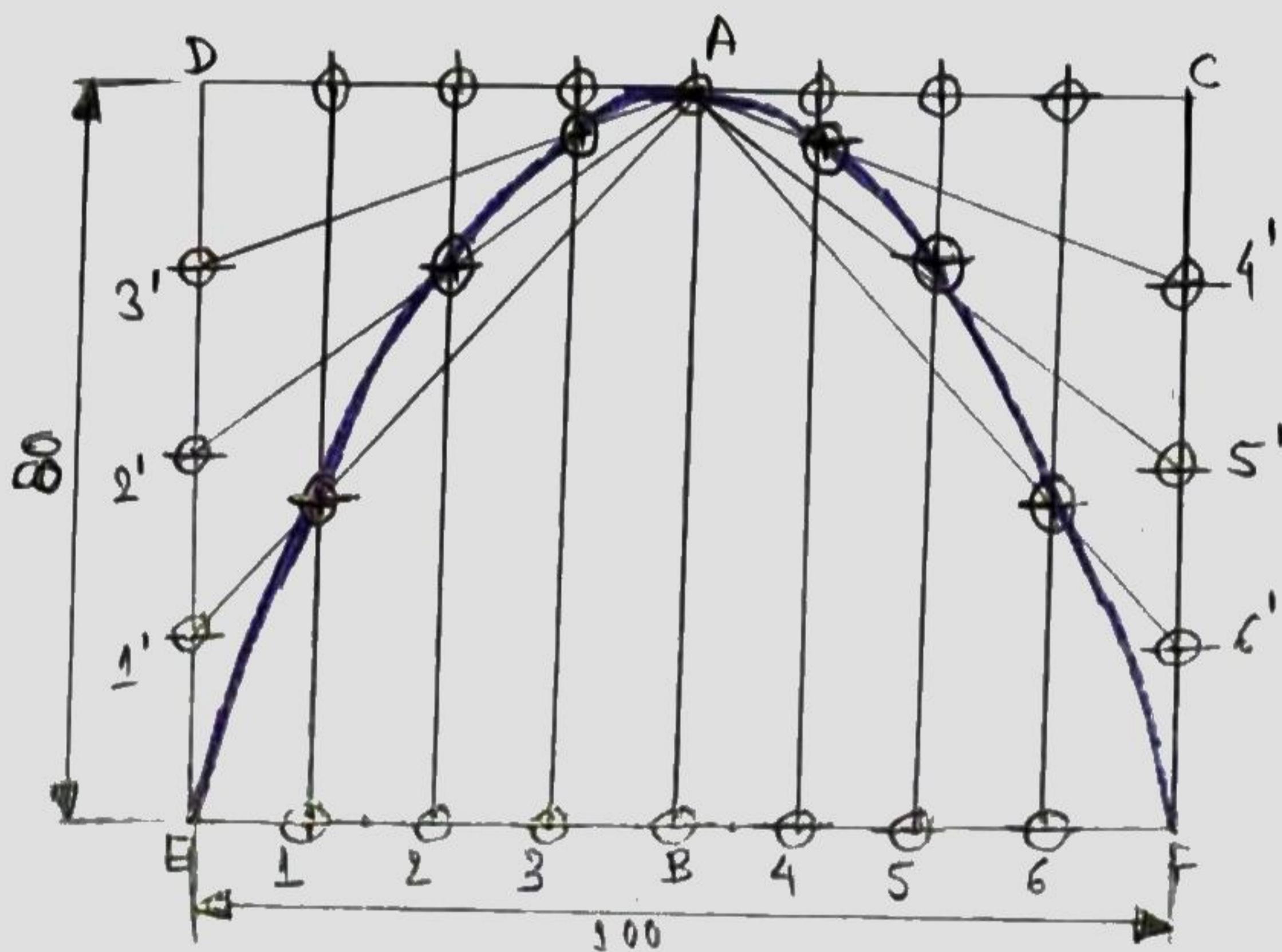


Fig. Free hand sketch of the solution to question #

7.4 Drawing Procedure:

→ Step 1.

Click command & type UNITS then set precision 0mm.

→ Step 2:- Type LIMITS then specify lower left corner points (0,0) and upper right corner (297, 210).

→ Step 3:- Type ZOOM then type/click ALL.

→ Step 4:- Click on line then create a box of dimensions $(100 \times 80) \text{ mm}^2$ and ~~size~~ Type DDPTYPE and set point style- & size. Divide the length into 8 equal parts and Breadth into 4 equal parts.

→ Step 5:- Then join the division points of the breadth to the upper and's point of the central line ; then mark the intersection points.

- Step 7:- Type SPLINE to create curve that pass through the intersection point from left corner to right corner of the box.
- Step 8:- Type PEDIT to set the thickness of curve and set the colour by using ByLayer to highlight the specific curve.
- Step 9:- Then click on linear dimension for showing the dimension of the box.

8. Commands used:

S.N.	Command	Use
1.	Units	To set precision & units scale.
2.	Limits	To set limit of grid.
3.	Zoom	To increase & decrease the size.
4.	Line	To Create straight line.
5.	DDPTYPE	To set style and size of point.
6.	Divide	To divide the line into equal parts.
7.	Point	To creates a specific point.
8.	Spline	To create curves.
9.	STYLE	To modify text style.
10.	DIMSTYLE	To modify dimension style.
11.	TEXT	To write text like point name.
12.	PEDIT	To edit polylines
13.	DIMENSION	To specify dimension of lines.

9. Result:

We can easily draw the parabola by using this method and the above commands, and also other comic curves and special curves.

Faculty Name		Date of Submission	
Signature		Marks	

