Unit 1 - Tutorial

Line Drawing

- Draw a line with endpoints (10,12) and (20,18) using DDA algorithm and plot it in cartesian graph.
- Draw a line with endpoints (7,8) and (12,19) using Bresenham’s algorithm.

Circle Drawing

- Using Midpoint algorithm, draw circles with
  - Radius r = 12
  - Radius r = 14 and Center = (15,10)

Ellipse Drawing

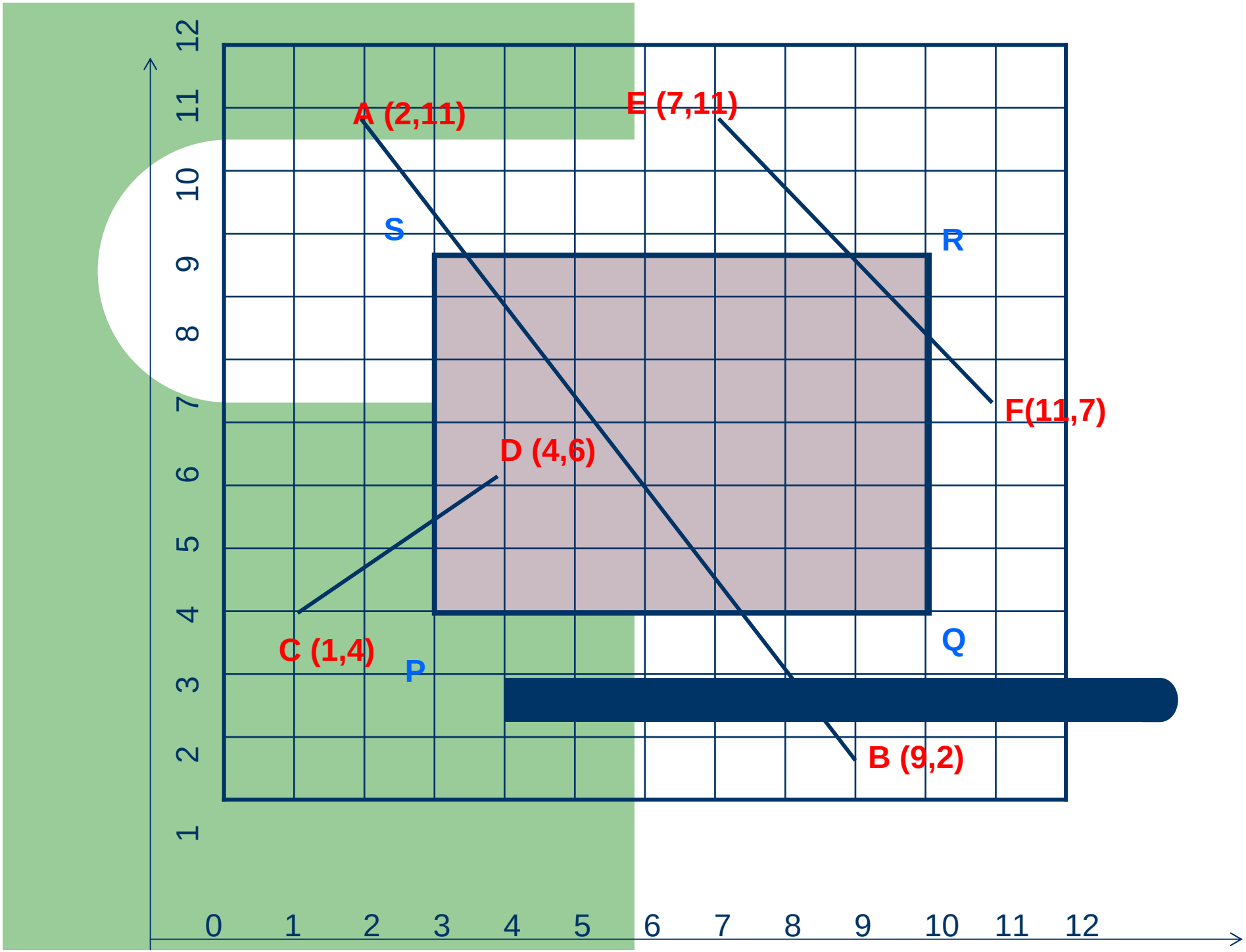
- Using Midpoint ellipse algorithm, draw the ellipses with
  - Rx = 10 Ry= 14
  - Rx = 14 Ry= 10 and center = (15,10)

2D Transformations

- Magnify the triangle P(0,0) Q(2,2) and R(10,4) to four times its size while keeping R(10,4) fixed.

Line Clipping

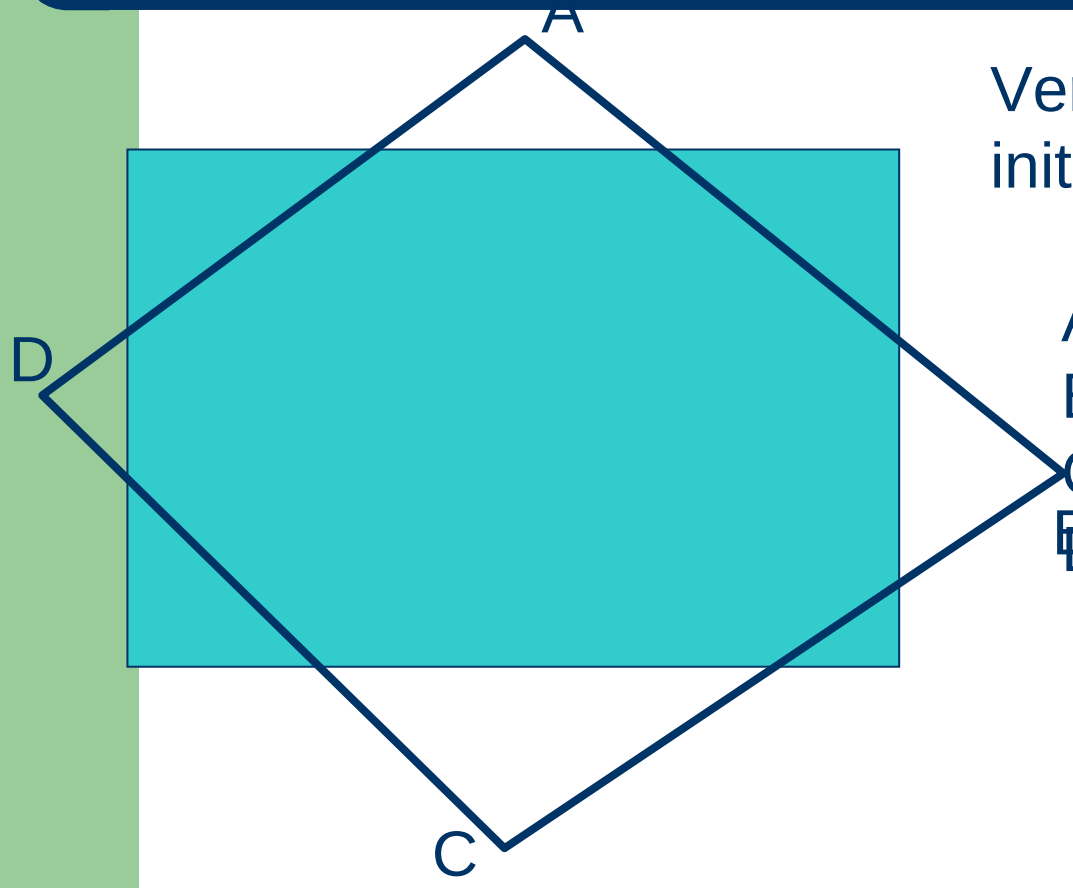
- Clip the lines in the following figure using
  - Cohen-sutherland algorithm
  - Liang Barsky algorithm


A (2,11)
E (7,11)
S
R
F(11,7)
D (4,6)
C (1,4)
P
Q
B (9,2)
0 1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12

Line Clipping

- Using Liang-Barsky algorithm, clip the line P1(-15,-30) and P2 (30,60) against the window with corners (0,0) and (15,15)

Polygon Clipping Using Sutherland-Hodgeman



Vertex List

initial	after left	after top	after right	after botto
A				
B				
C				
D				

Polygon Clipping

Using Weiler Atherton Algorithm, clip the polygon shown below