for $x = -49$
$$y = -9$$
$$d = 15 + (-70) = -55$$

for $x = -48$
$$d = -55 + 100 = 45$$

for $x = -47$
$$y = -8$$
$$d = 45 + (-70) = -25$$

for $x = -46$
$$d = -25 + 100 = 75$$

for $x = -45$
$$y = -7$$
$$d = 75 + (-70) = 5$$

$x = -44$
$$y = -6$$
$$d = 5 + (-70) = -65$$

$x = -43$
$$d = -65 + 100 = 35$$

$x = -42$
$$y = -5$$
$$d = 35 + (-70) = -35$$

$x = -41$
$$d = -35 + 100 = 65$$

Serial	x	y	d_{init}	E or NE?
1.	−50	10	15	NE
2.	−49	9	−55	E
3.	−48	9	45	NE
4.	−47	8	−25	E
5.	−46	8	75	NE
6.	−45	7	5	NE
7.	−44	6	−65	E
8.	−43	6	35	NE
9.	−42	5	−35	E
10.	−41	5	60	NE

CSE423

Computer Graphics

Time: 15 min   Total marks: 8

ID: __19201012__   Name: __Rifat Jereen.__

1. Let you have to draw a line from **(-50, 10)** to **(35, -40)**.

   a) What is the zone of the line?   Zone 7

   b) What is the coordinate of the endpoints in zone0? $(-50, -10)$ $(35, 40)$

   c) What are the values of the decision variables in zone0?

$$d = 2dy - dx$$
$$= 2 \times 50 - 85$$
$$= 15$$

$$IncrE = 2dy$$
$$= 2 \times 50$$
$$= 100$$

$$IncrNE = 2dy - 2dx$$
$$= 2 \times 50 - 2 \times 85$$
$$= -70$$

$$dy = x_2 - x_1 = 35 + 50$$
$$= 85$$

$$dy = y_2 - y_1 = -40 - 10$$
$$= -50$$

$$dx > dy$$

   d) Calculate the pixel coordinates of the first 10 pixel of the above line using midpoint algorithm.

Serial	x	y	d_{init}	E or NE?
1.	-50	10	15	NE
2.	-49	9	-55	E
3.	-48	9	45	NE
4.	-47	8	-25	E
5.	-46	8	75	NE
6.	-45	7	5	NE
7.	-44	6	-65	E
8.	-43	6	35	NE
9.	-42	5	-35	E
10.	-41	5	60	NE