

Quiz 1

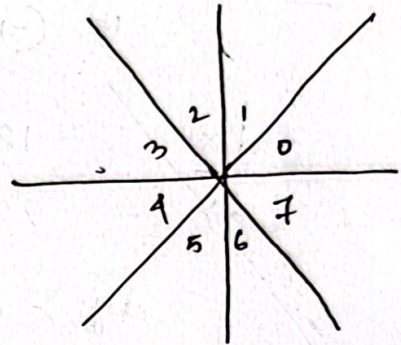
1(a) A (110, -110)

B (-120, 220)

$$dx = -120 - 110 = -230$$

$$dy = 220 + 110 = 330$$

$$|dy| > |dx|, \text{ zone } = 2$$



converting the endpoints to zone 6

A' (-110, 110)

B' (120, -220)

(b) A (110, -110), B (-120, 220) → zone 2

converting the endpoints to zone 0.

A' (-110, -110), B' (220, 120)

$$dx' = 220 + 110 = 330$$

$$dy' = 120 + 110 = 230$$

$$D = 2 \times 230 - 330 = 130$$

$$\Delta NE = 2 \times 230 - 2 \times 330 = -200$$

$$\Delta E = 2 \times 230 = 460$$

X'	Y'	D	NE/E	d(update)	X	Y	point
-110	-110	130	NE	-70	110	-110	(110, -110)
-109	-109	-70	E	390	109	-109	(109, -109)
-108	-109	390	NE	190	109	-108	(109, -108)
-107	-108	190	NE	-10	108	-107	(108, -107)
-106	-107	-10	E	450	107	-106	(107, -106)
-105	-107	450	NE	250	107	-105	(107, -105)
-104	-106	250	NE	50	106	-104	(106, -104)

(c) * A (110, -110)
B (-120, 220)

$$dx = -120 - 110 = -230$$

$$dy = 220 + 110 = 330$$

$$dy > dx$$

So,

$$y_{k+1} = y_k + 1$$

$$x_{k+1} = x_k + \frac{1}{m}$$

(2) (a) resolution = 2560 X 1440

frame rate = 65 FPS

total number of pixels processed per second =

$$2560 \times 1440 \times 65 = 239616000 \text{ pixels}$$

(b) Already discussed in the class