Amalia Fandaning Tyas
1905139012.

① Diketahui titik awal P(1,1) dan titik akhir di (10,10) dengan area clipping x min = 1, y min = 1, x max = 7 dan y max = 7. Selesaikan masalah ini dengan clipping cohen sutherland.

Garis P(1,1)
L = 0 ; karena 1 < x_{min} 1
R = 0 ; karena 1 < x_{max} 7
B = 0 ; karena 1 < y_{min} 1
T = 0 ; karena 1 < y_{max} 7

Vertex P = 0000

Garis Q (10,10)
L = 0 ; karena 10 < x_{min} 1
R = 1 ; karena 10 < 7 x_{max}
B = 0 ; karena 10 < y_{min} 1
T = 1 ; karena 10 < y_{min} 7

Vertex Q = 0101

.) Region code
0000 AND 0101 = 0000

.) $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10-1}{10-1} = \frac{9}{9} = 1$

.) $x_{p1} = x_1 + \frac{y_{min} - y_1}{m}$

$= 1 + \frac{1-1}{1}$

$= 1 + \frac{0}{1} = 1$

Maka titpot = $(x_{p1}, y_{min}) = (1,1)$ pada garis PQ

2) Berdasarkan Soal no.1 lakukan clipping menggunakan algoritma Liang - Barsky dimana $xl = 1$, $xr = 7$ $yb = 1$ dan $yt = 7$.

→ $dx = x_2 - x_1$
$= 10 - 1 = 9$

$p_1 = -dx$
$= -9$

$p_2 = dx$
$= 9$

$p_3 = -dy$
$= -9$

$p_4 = dy$
$= 9$

→ $dy = y_2 - y_1$
$= 10 - 1 = 9$

$q_1 = x_1 - xl$
$= 1 - 1 = 0$

$q_2 = xr - x_1$
$= 7 - 1 = 6$

$q_3 = y_1 - yb$
$= 1 - 1 = 0$

$q_4 = yt - y_1$
$= 7 - 1 = 6$

•) $\frac{Q_1}{p_1} = \frac{0}{-9} = 0$

•) $\frac{Q_2}{p_2} = \frac{6}{9} = \frac{2}{3}$

•) $\frac{Q_3}{p_3} = \frac{0}{-9} = 0$

•) $\frac{Q_4}{p_4} = \frac{6}{9} = \frac{2}{3}$

-) Untuk $(p_1 < 0) T_1 =$ "max" $(0, 00)$
$= 0$

•) Untuk $(p_1 > 0) T_2 =$ "min" $(2/3, 2/3, 1)$
$= 2/3$

$T_1 < T_2$

✻ $T_1 = 0$

$x_1' = x_1 + dx \times T_1$
$= 1 + 9 \times 0 = 1$

$y_1' = y_1 + dy \times T_1$
$= 1 + 9 \times 0 = 1$

$(x_1, y_1) \rightarrow (1, 1)$ //

✻ $T_2 = 2/3$

$x_2' = x_1 + dx \times T_2$
$= 1 + 9 \times 2/3 = 7$

$y_2' = y_1 + dy \times T_2$
$= 1 + 9 \times 2/3 = 7$

$(x_2', y_2') \rightarrow (7, 7)$ //