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(1). Diketahui :

Titik awal P : (1,1)

Titik akhir Q : (10,10)

x min = 1
y min = 1
x max = 7
y max = 7

Jawab :

•) Garis P

L = 0
R = 0
B = 0
T = 0

•) Garis Q

L = 0
R = 1
B = 0
T = 1

Sehingga region code dari P = 0000
Q = 0101

•) 0000 AND 0101 = 0000

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

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

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

$$= \frac{1}{1}$$

$$x_{p1} = 1$$

Maka titik potongnya adalah $(x_{p1}, y_{min}) = (1,1)$

(2) Diket: $x_l = 1$

$x_r = 7$

$y_b = 1$

$y_t = 7$

$P = (1,1)$

$Q = (10,10)$

Jawab :

$dx = x_2 - x_1$

$= 10 - 1$

$dx = 9$

$dy = y_2 - y_1$

$= 10 - 1$

$dy = 9$

$\rightarrow p_1 = -dx$

$p_1 = -9$

$\rightarrow p_2 = dx$

$p_2 = 9$

$\rightarrow p_3 = -dy$

$p_3 = -9$

$\rightarrow p_4 = dy$

$p_4 = 9$

$\rightarrow q_1 = x_1 - x_l$

$= 1 - 1$

$q_1 = 0$

$\rightarrow q_2 = x_r - x_1$

$= 7 - 1$

$q_2 = 6$

$\rightarrow q_3 = y_1 - y_b$

$= 1 - 1$

$= 0$

$\rightarrow q_4 = y_T - y_1$

$= 7 - 1$

$= 6$

a). $\frac{q_1}{p_1} = \frac{0}{-9} = -9$

b). $\frac{q_2}{p_2} = \frac{6}{9} = \frac{2}{3}$

c). $\frac{q_3}{p_3} = \frac{0}{-9} = 0$

d). $\frac{q_4}{p_4} = \frac{6}{9} = \frac{2}{3}$

Untuk $(p_i < 0)\ T_1$ = "Max" $(0,0,0) = 0$

Untuk $(p_i > 0)\ T_2 = \text{Min}\left(\frac{2}{3}, \frac{2}{3}, 1\right) = \frac{2}{3}$

Jadi, $T_1 < T_2$

$T_1 = 0$

$x_1' = x1 + dx * t_1$

$= 1 + 9.0$

$= 1 + 0$

$x_1' = 1$

$y_1' = y_1 + dy \cdot t_1$

$= 1 + 9.0$

$= 1$

$\Rightarrow (x_1', y_1') = (1,1)$

$T_2 = \frac{2}{3}$

$x_2' = x_1 + dx \cdot t_2$

$= 1 + 9 \cdot \frac{2}{3}$

$= 1 + 6$

$x_2' = 7$

$y_2' = y_1 + dy \cdot t_2$

$= 1 + 9 \cdot \frac{2}{3}$

$y_2 = 7$

$\Rightarrow [x_2', y_2') = (7,7)$