Algorithm :-

(1) Assign region code to both end points say $C_0$ and $C_1$

(2) If $C_0$ OR $C_1$ = 0000 then accept completely (Line lies inside window).

else if

$C_0$ AND $C_1 \neq 0000$ then Reject it (Line lies completely outside window)

else

clip the line (a line lies partially inside the window) crossing $x_{min}$ or $x_{max}$.

then

$y = y_1 + m(x - x_1)$ $x = x_{max}$ or $x_{min}$

else

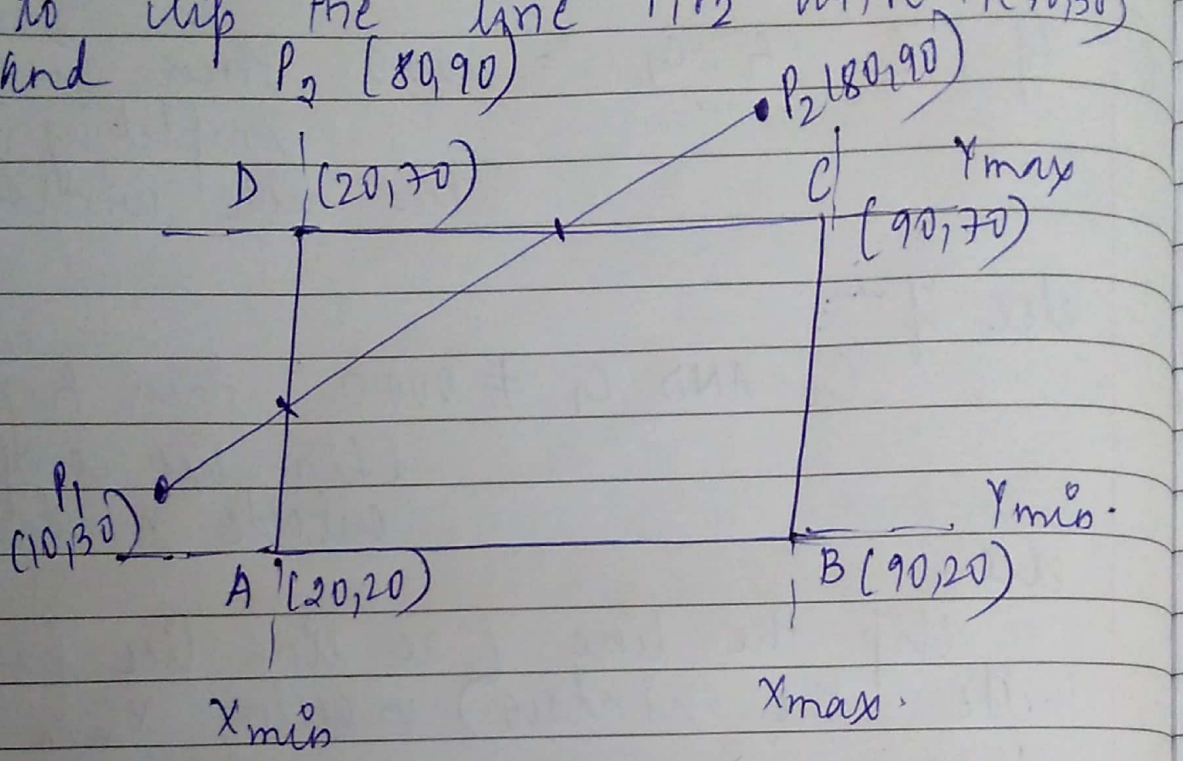
$x = x_1 + \frac{1}{m}(y - y_1)$ $y = y_{max}$ or $y_{min}$.

(3) Verify $x_{min} \leq x \leq x_{max}$

$y_{min} \leq y \leq y_{max}$

} If it doesn't satisfy then repeat

Ques. Let ABCD be the rectangular window A(20,20) B(90,20) C(90,70) D(20,70). Find region codes for the end points and use Cohen Sutherland algo to clip the line $P_1P_2$ with $P_1(10,30)$ and $P_2(80,90)$




(1) Finding region code

| | |
|---|---|
| $P_2$ | 1000 |
| $P_1$ | 0001 |
| AND | 0000 |

Slope $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{90-30}{80-10} = 0.857$

$$y = m(x_{min} - x_1) + y$$
$$= 0.857\ (20-10) + 30$$
$$= 38.57$$

$$P_1' = (20, 38.57)$$

For 2nd Intersection point $P_2'$

$$x = \frac{1}{m}(y_{max} - y_1) + x_1$$

$$= \frac{1}{0.857}(70 - 30) + 10$$

$$x = 56.67$$

$P_2'(56.67, 70) \approx (57, 70)$