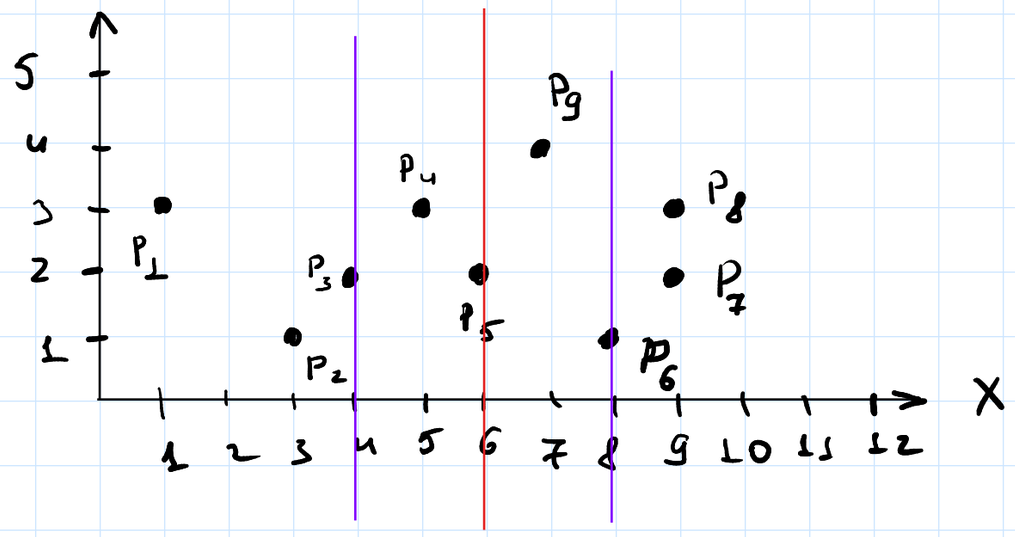
Proximity

Варіант № 61

1.Задано точки:
(1;3), (3;1), (4;2), (6;2), (7;4), (5;3),(8;1), (9;2), (9;3)

2. Вставити точку (2;5)



1. $S = \{P_1, \dots, P_9\}$
2. Сортуємо S по x, y:

$U_x = \{P_1, P_2, P_3, P_4, P_5, P_9, P_6, P_7, P_8\}$

$U_y = \{P_2, P_6, P_3, P_5, P_7, P_1, P_4, P_8, P_9\}$

3. $S \Rightarrow \{P_1, P_2, P_3, P_4, P_5, P_9, P_6, P_7, P_8\}$ $\delta(P_7, P_8)$

$\{P_1, P_2, P_3, P_4, P_5\} U_1$ $\delta(P_2, P_3)$

U_{11} $\{P_1, P_2, P_3\}$ $\delta(P_2, P_3)$

U_{12} $\{P_3, P_4, P_5\}$ $\delta(P_3, P_4)$

U_2 $\{P_5, P_9, P_6, P_7, P_8\}$ $\delta(P_7, P_8)$

U_{21} $\{P_5, P_9, P_6\}$ $\delta(P_5, P_6)$

U_{22} $\{P_6, P_7, P_8\}$ $\delta(P_7, P_8)$

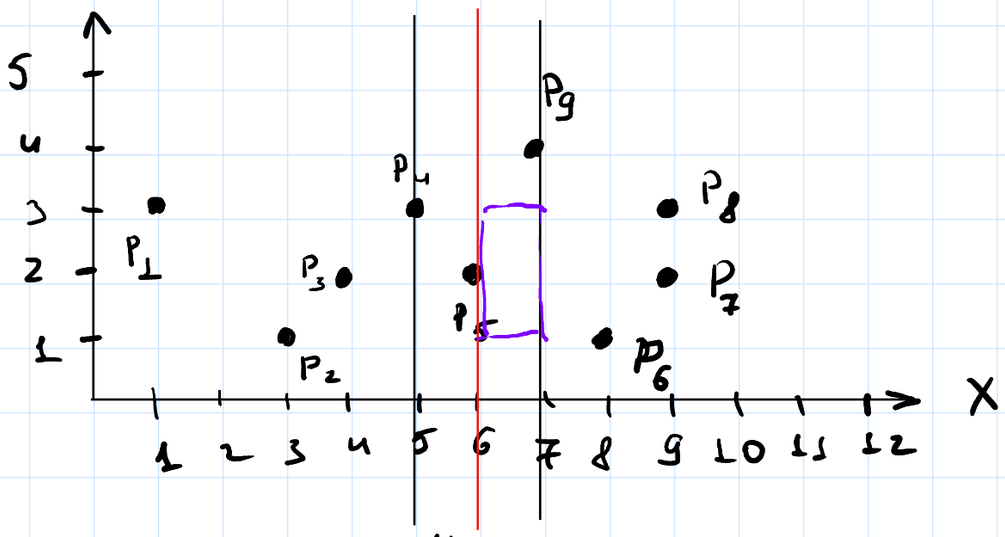
Показуємо крок зупинки на останньому кроці

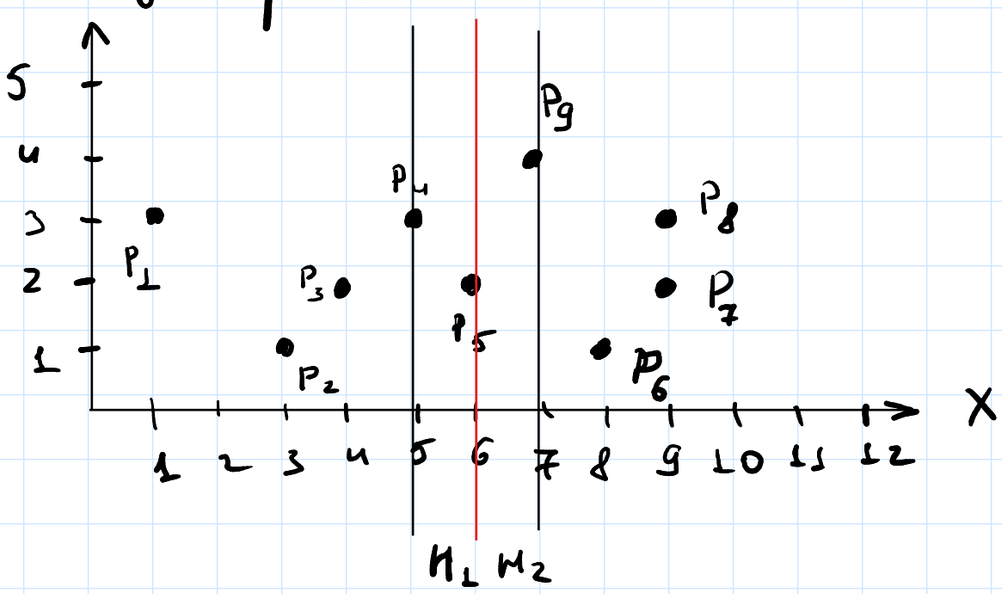
$\delta := \min(\delta(P_2, P_3), \delta(P_7, P_8)) = \delta(P_7, P_8) = 1$

$H_1^* = \{P_5, P_4\}$

$H_2^* = \{P_5, P_9\}$

P_5:





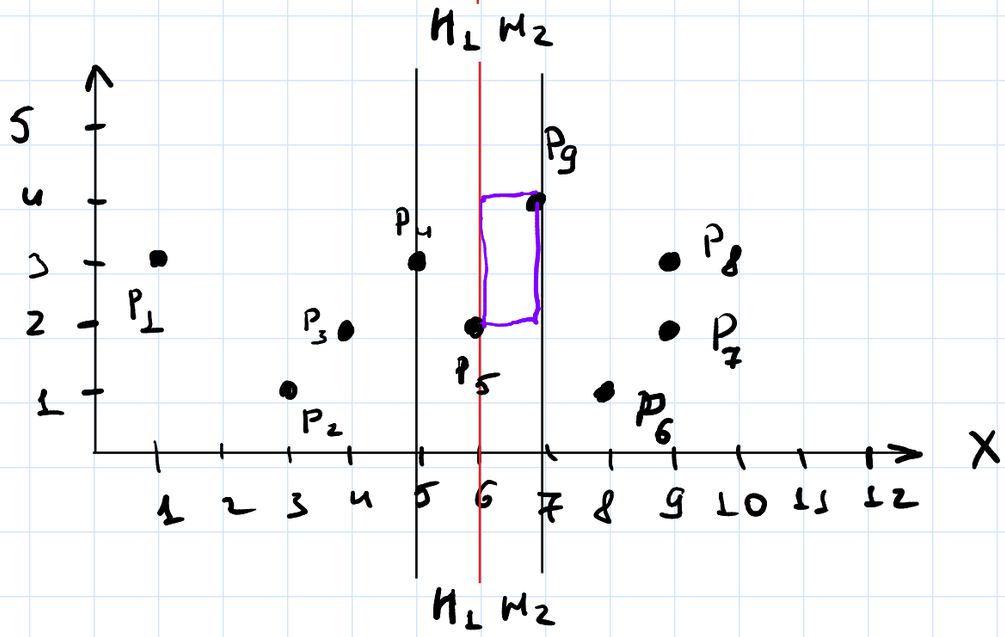
ϕ

P_5 $\delta(P_4, P_5) \approx 1{,}41 > \delta$ $\Rightarrow$

P_9 $\delta(P_4, P_9) \approx 2{,}24 > \delta$

$\Rightarrow$ пропускаємо

P_4:



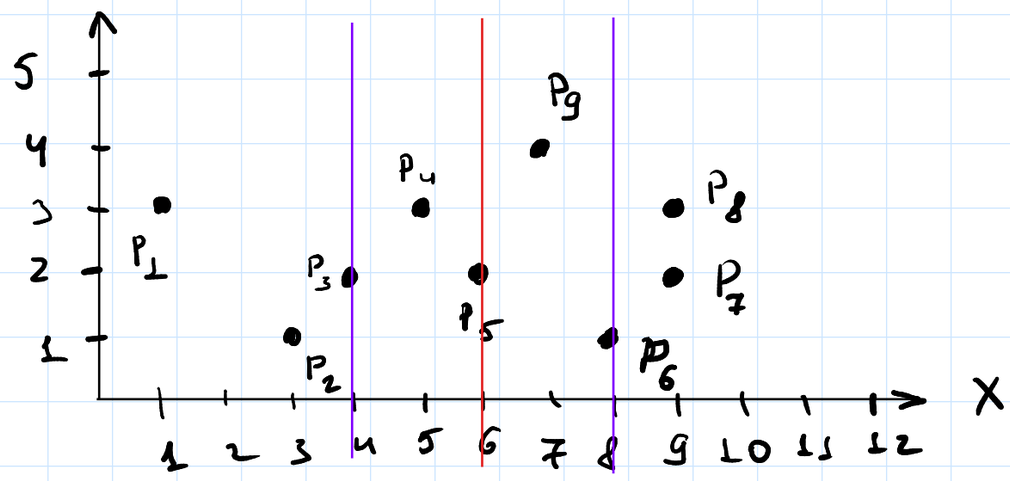
Отже, $НП(S) = (P_7, P_8)$

Voronoi diagram

Варіант № 61

1.Задано точки:
(1;3), (3;1), (4;2), (6;2), (7;4), (5;3),(8;1), (9;2), (9;3)

2. Вставити точку (2;5)

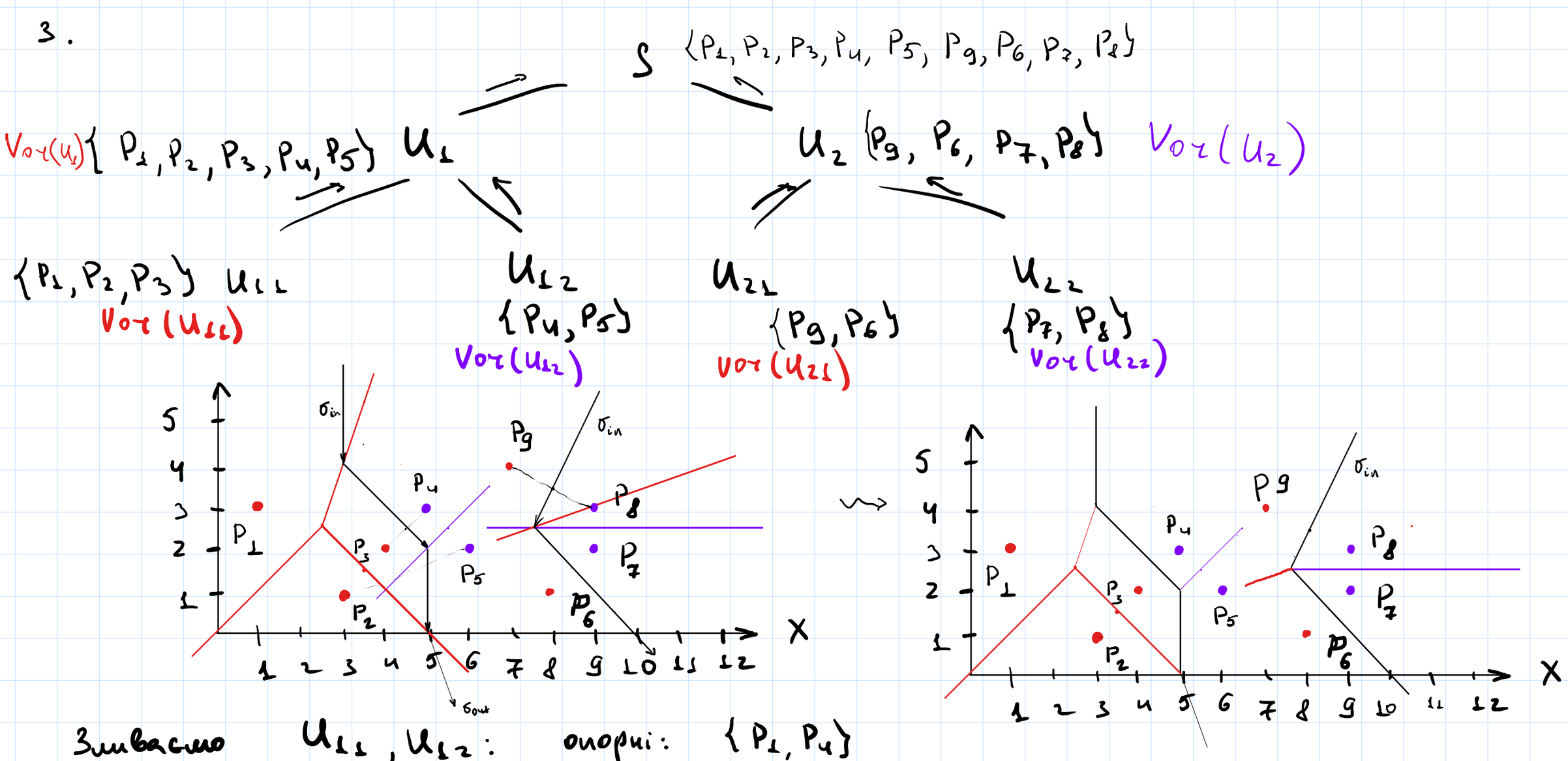


1. $S = \{P_1 \dots P_9\}$

2. $U_x = \{P_1, P_2, P_3, P_4, P_5, P_9, P_6, P_7, P_8\}$

$U_y = \{P_2, P_6, P_3, P_5, P_7, P_1, P_4, P_8, P_9\}$

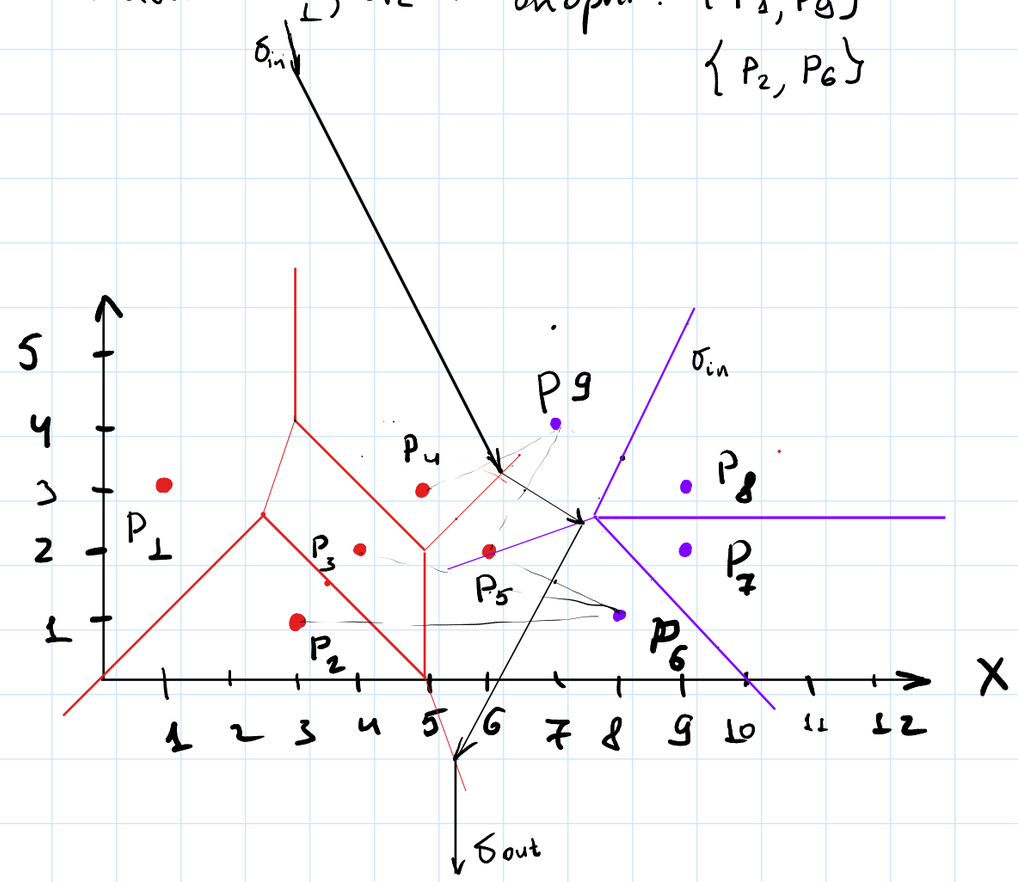
3.



Зливаємо U_{11}, U_{12}: опорні: $\{P_1, P_4\}$
$\{P_2, P_5\}$

Зливаємо U_{21}, U_{22}: опорні: $\{P_9, P_8\}$
$\{P_6, P_7\}$

Зливаємо U_1, U_2: опорні: $\{P_1, P_9\}$
$\{P_2, P_6\}$



Зливаємо U_1, U_2: опорні: $P_1, P_9\}$
$\{P_2, P_6\}$