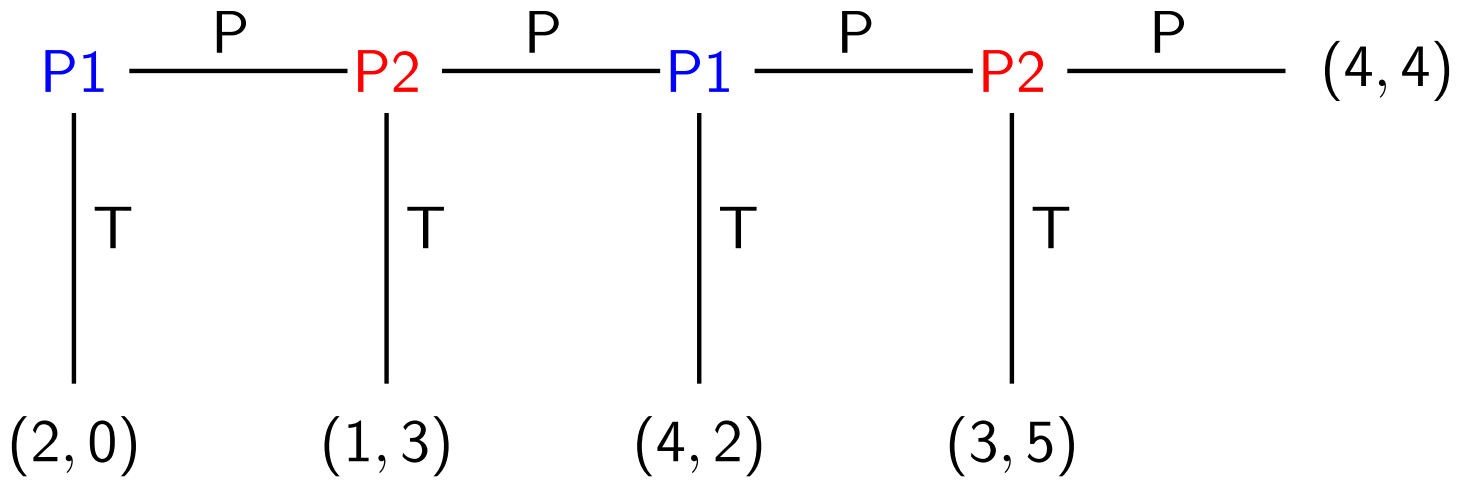
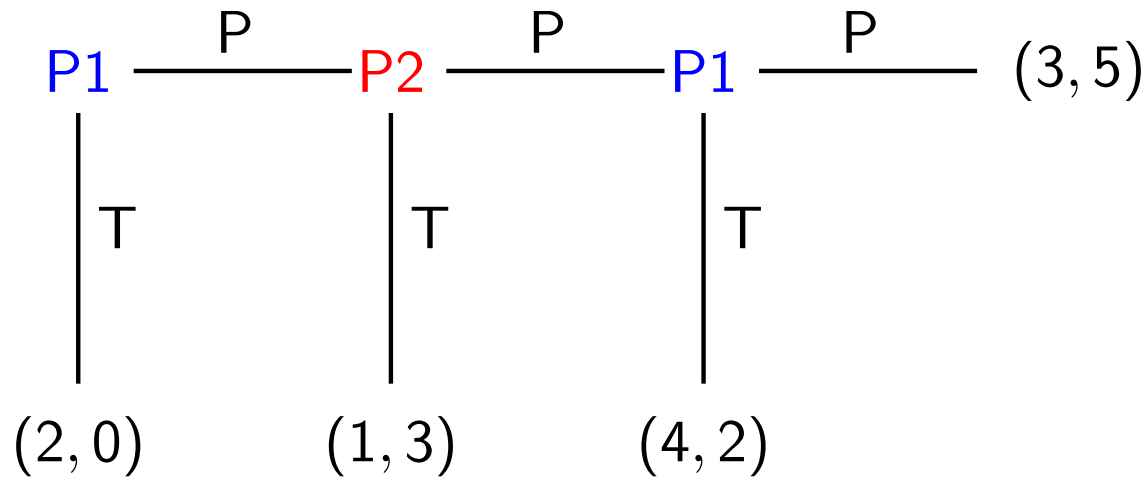
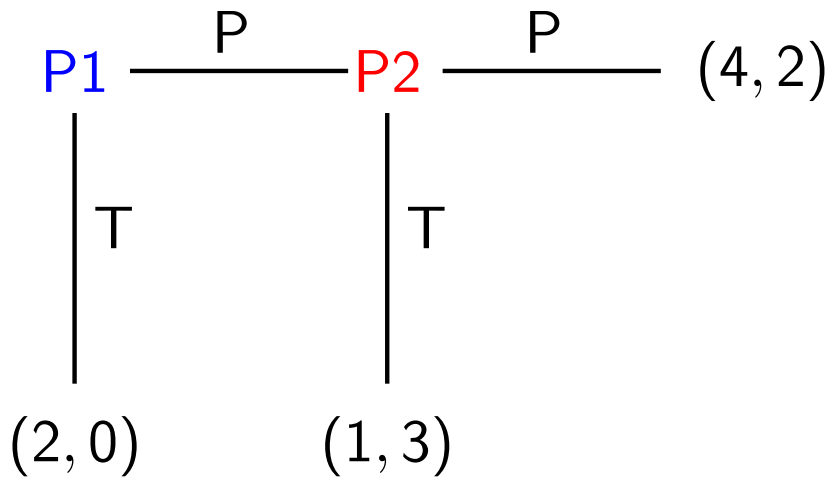
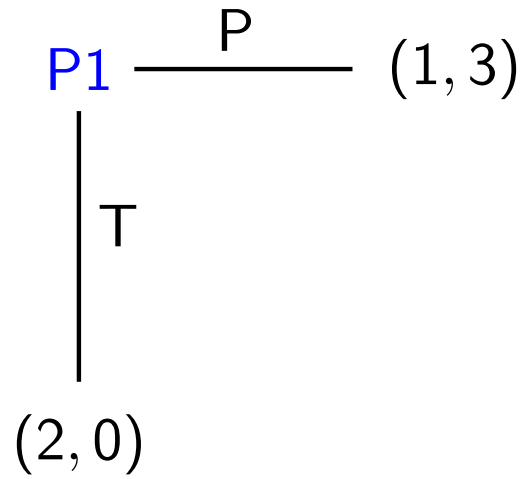
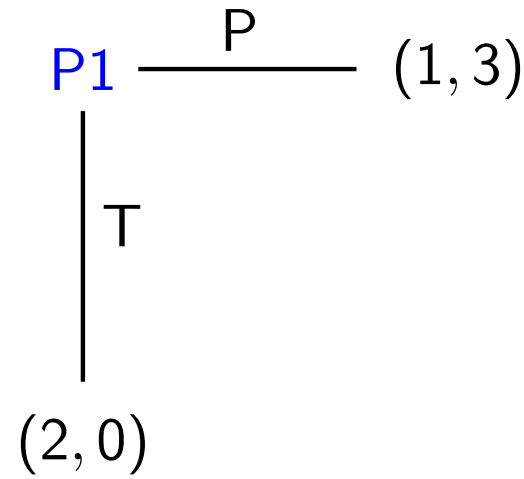
Subgame perfect equilibrium in the Centipede game


P1
P
P2
P
P1
P
P2
P
(4, 4)
T
T
T
T
(2, 0)
(1, 3)
(4, 2)
(3, 5)

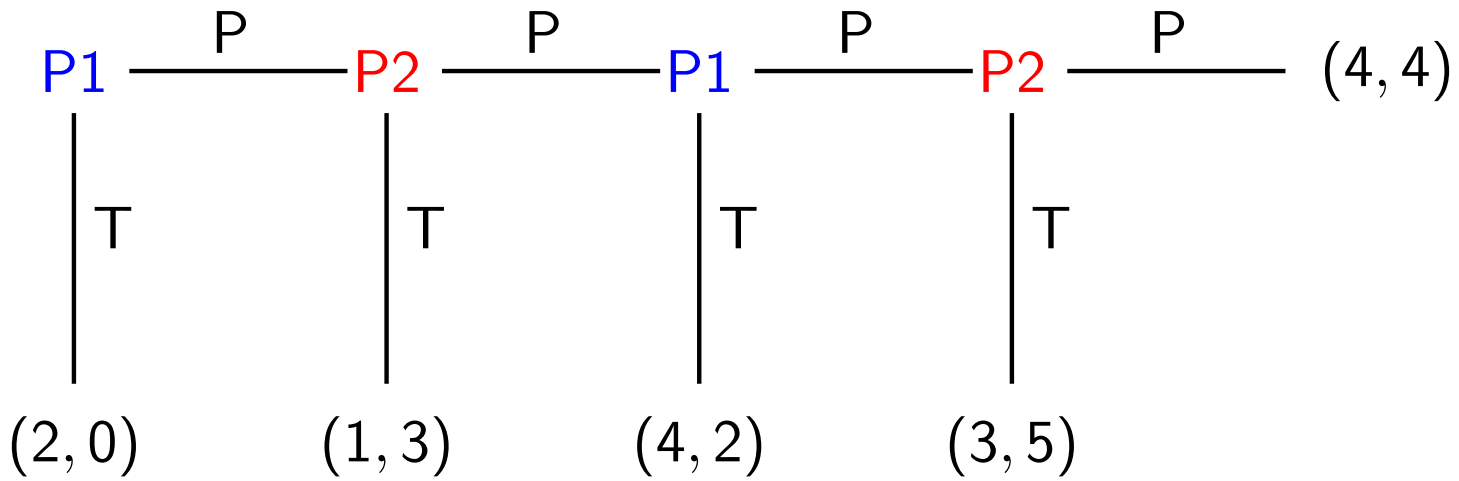

P1
P
P2
P
P1
P
(3, 5)
T
T
T
(2, 0)
(1, 3)
(4, 2)


P1
P
P2
P
(4, 2)
T
T
(2, 0)
(1, 3)

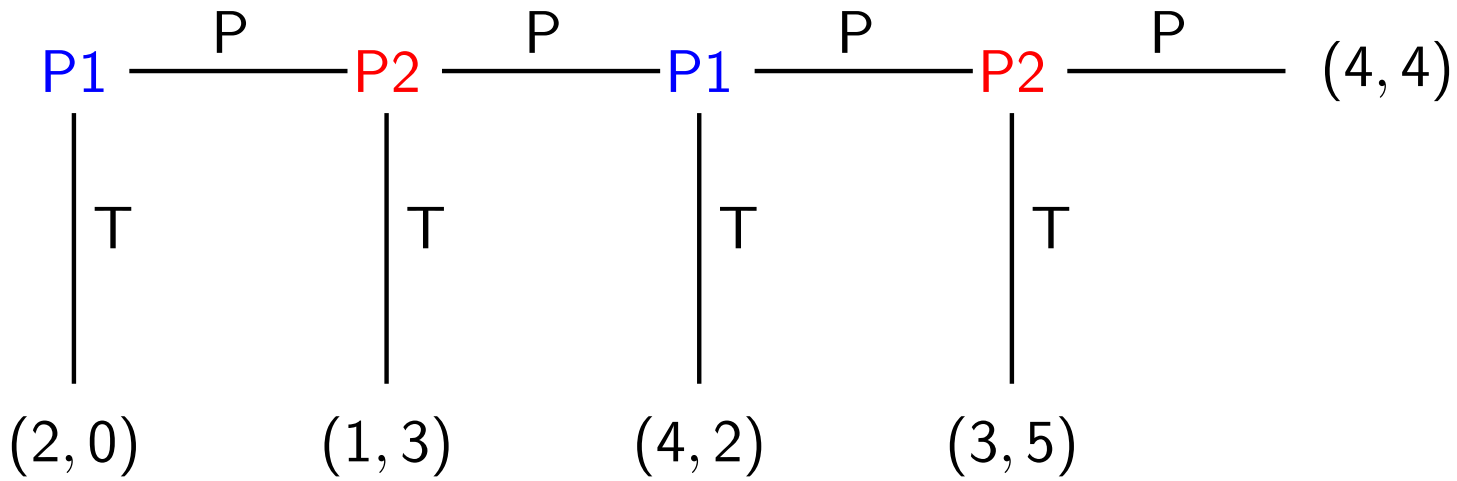

P1
P
(1, 3)
T
(2, 0)



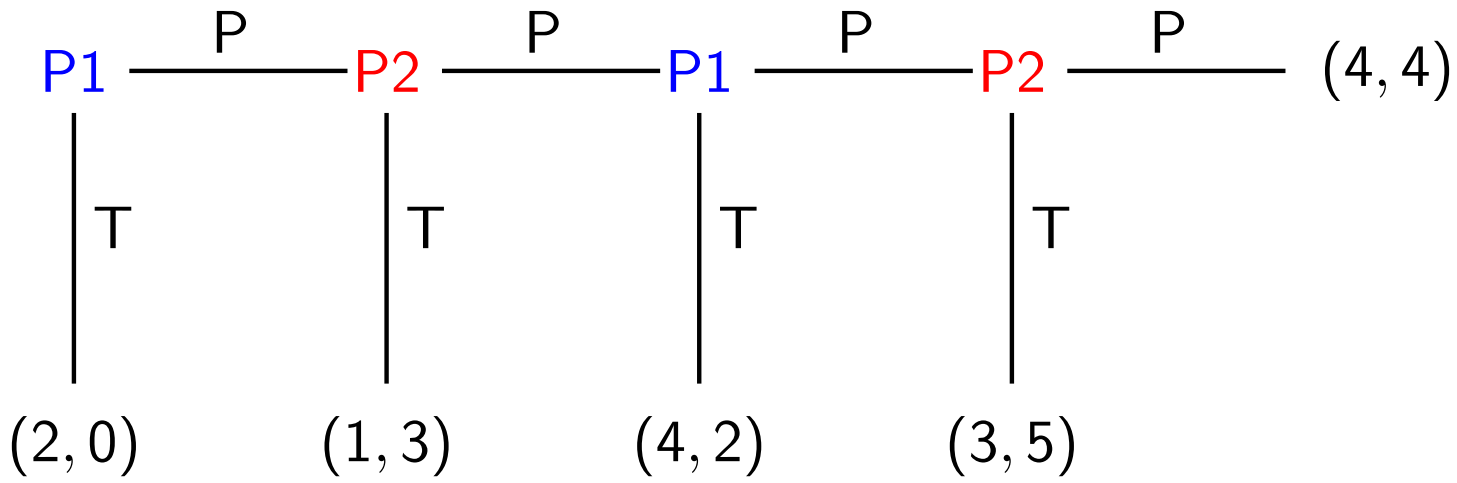
Nash equilibrium: (TT, TT).

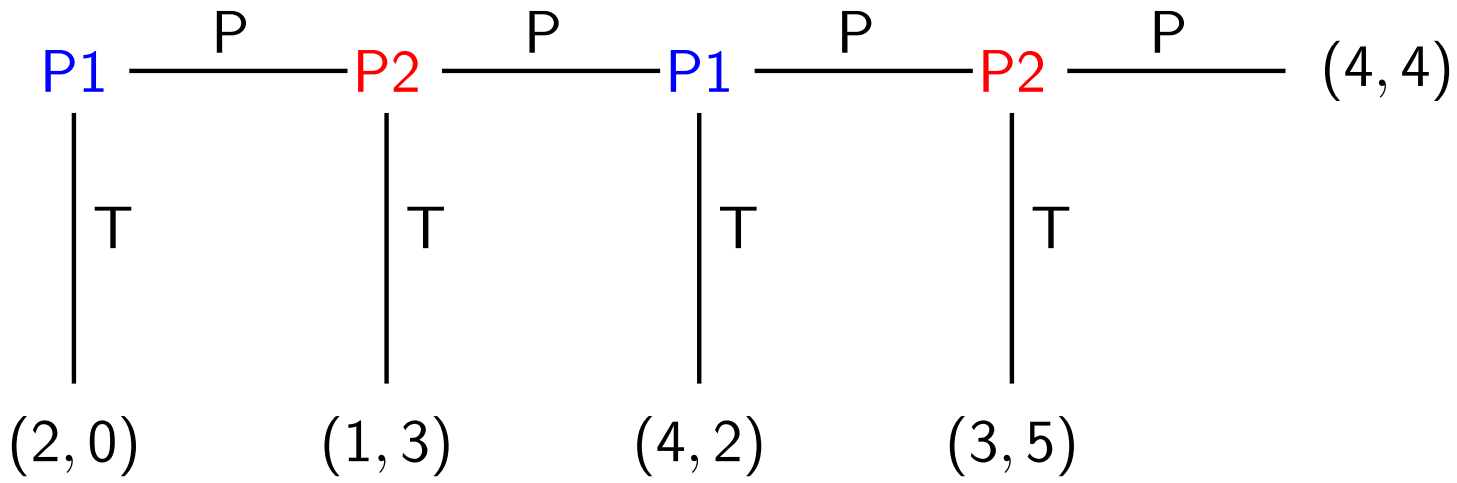


Nash equilibrium: (TT, TT).



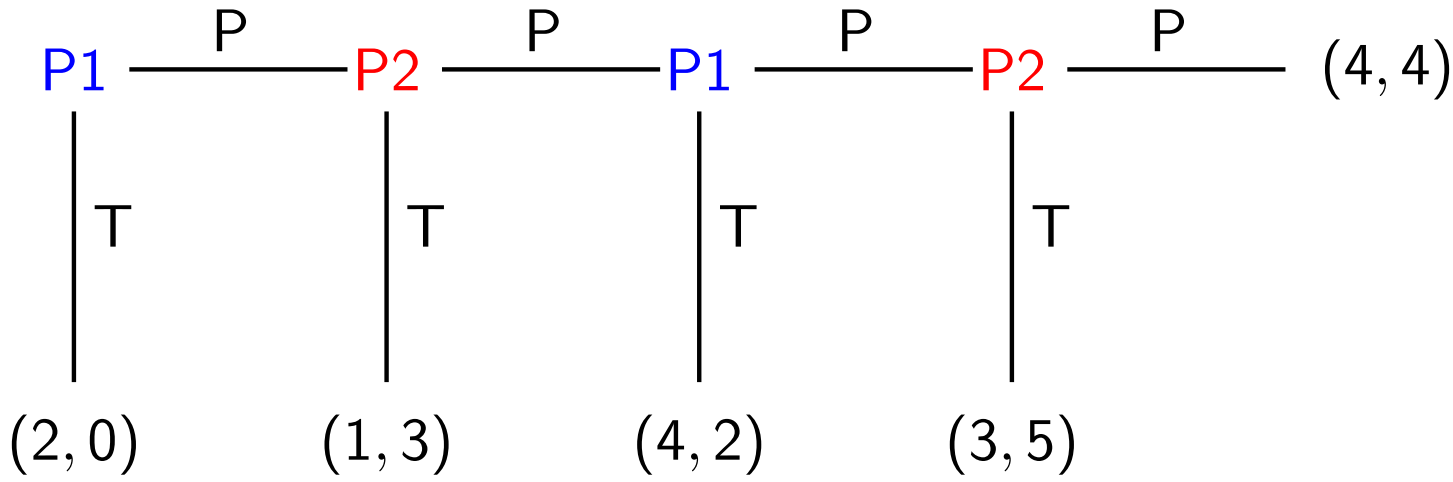
Nash equilibrium: $\{(\mathrm{TT}, \mathrm{TT}), (\mathrm{TP}, \mathrm{TT}), (\mathrm{TT}, \mathrm{TP}), (\mathrm{TP}, \mathrm{TP})\}$.


P1
P
P2
P
P1
P
P2
P
(4, 4)
T
T
T
T
(2, 0)
(1, 3)
(4, 2)
(3, 5)



$\Leftrightarrow$

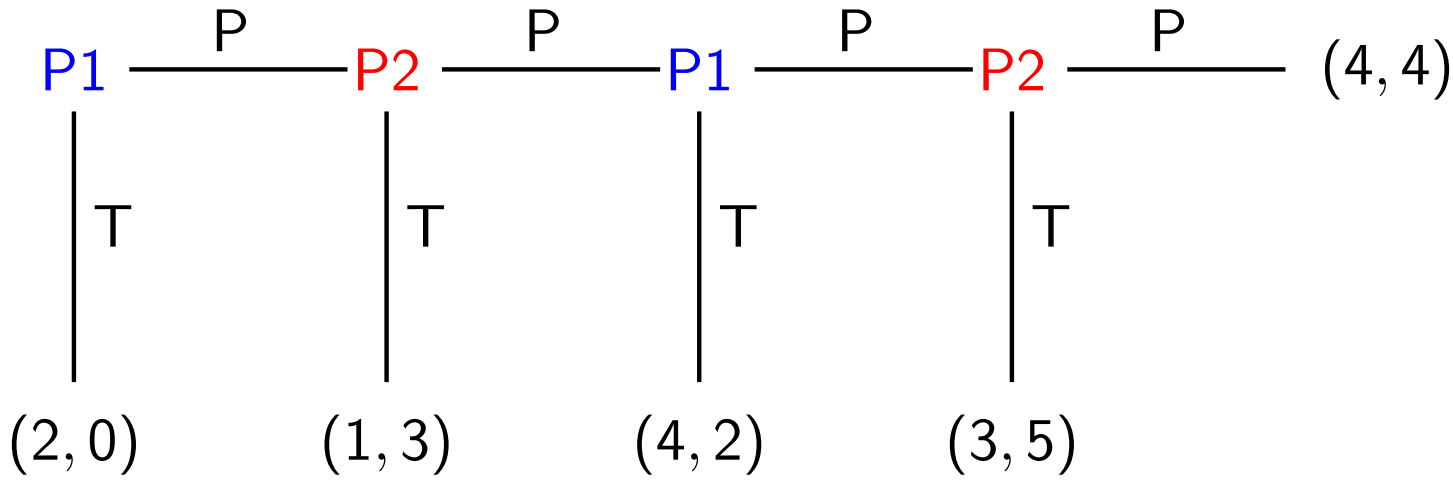
$$S_1 = S_2 = \{PP, PT, TP, TT\}$$



$$\Leftrightarrow$$

$$S_1 = S_2 = \{PP, PT, TP, TT\}$$

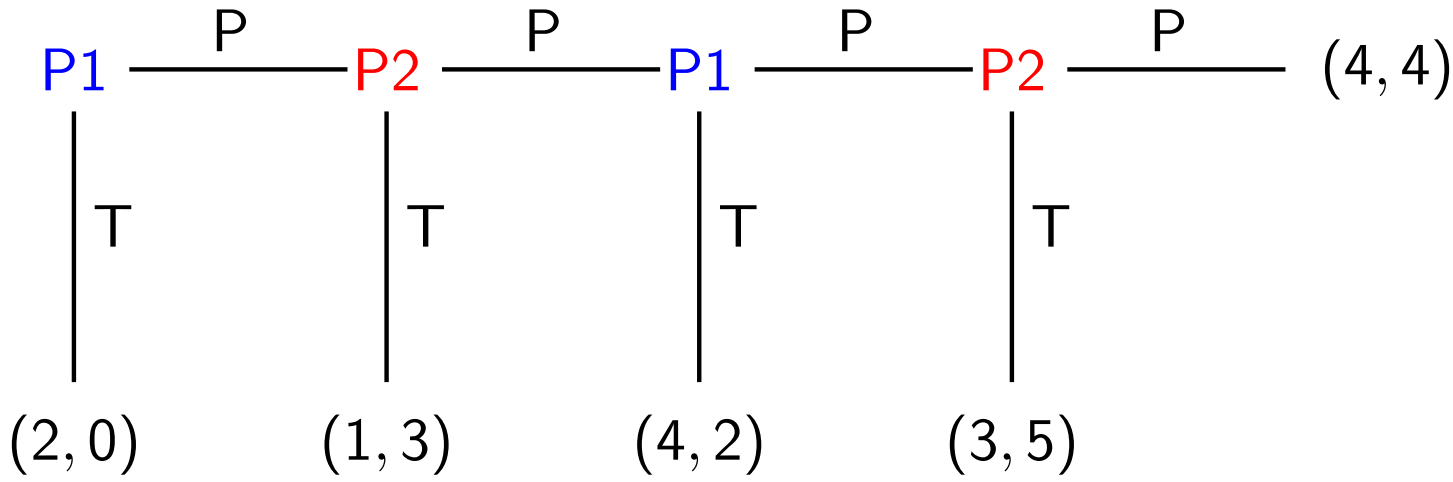
$$\begin{pmatrix} (4,4) & (3,5) & (1,3) & (1,3) \\ (4,2) & (4,2) & (1,3) & (1,3) \\ (2,0) & (2,0) & (2,0) & (2,0) \\ (2,0) & (2,0) & (2,0) & (2,0) \end{pmatrix}$$



$$\Leftrightarrow$$

$$S_1 = S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (\underline{4},4) & (3,5) & (1,3) & (1,3) \\ (\underline{4},2) & (\underline{4},2) & (1,\underline{3}) & (1,\underline{3}) \\ (2,\underline{0}) & (2,\underline{0}) & (\underline{2},\underline{0}) & (\underline{2},\underline{0}) \\ (2,\underline{0}) & (2,\underline{0}) & (\underline{2},\underline{0}) & (\underline{2},\underline{0}) \end{pmatrix}$$

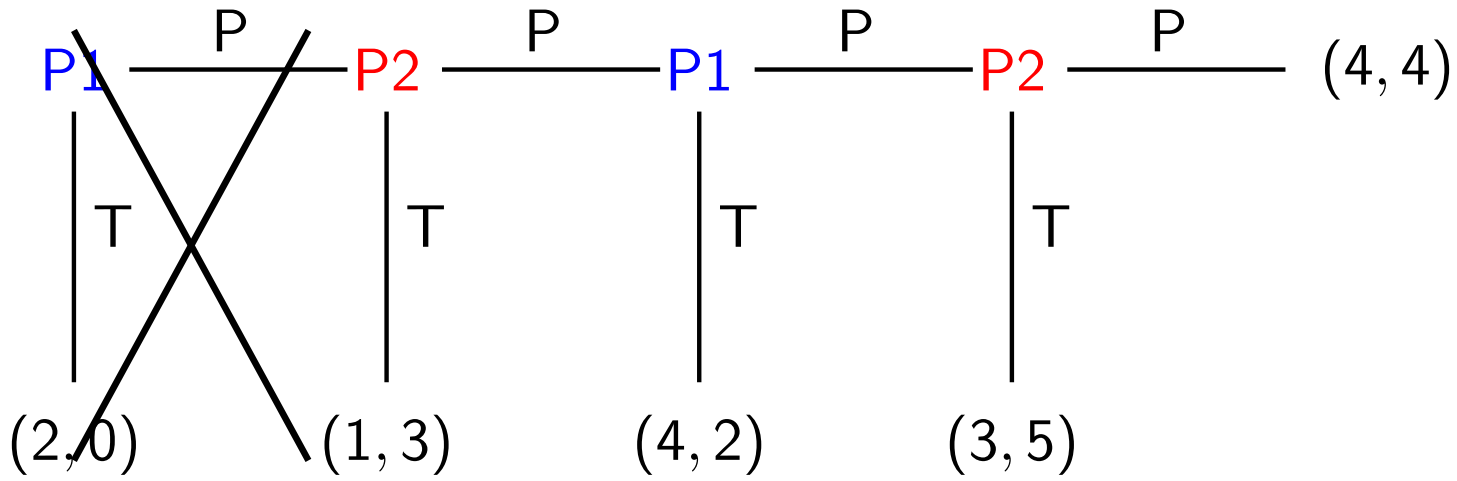


$$\Leftrightarrow$$

$$S_1 = S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (\underline{4},4) & (3,5) & (1,3) & (1,3) \\ (\underline{4},2) & (\underline{4},2) & (1,\underline{3}) & (1,\underline{3}) \\ (2,\underline{0}) & (2,\underline{0}) & (\underline{2},\underline{0}) & (\underline{2},\underline{0}) \\ (2,\underline{0}) & (2,\underline{0}) & (\underline{2},\underline{0}) & (\underline{2},\underline{0}) \end{pmatrix}$$

Nash equilibrium: $\{(\mathrm{TT},\mathrm{TT}),(\mathrm{TP},\mathrm{TT}),(\mathrm{TT},\mathrm{TP}),(\mathrm{TP},\mathrm{TP})\}$.


P1
P
P2
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P1
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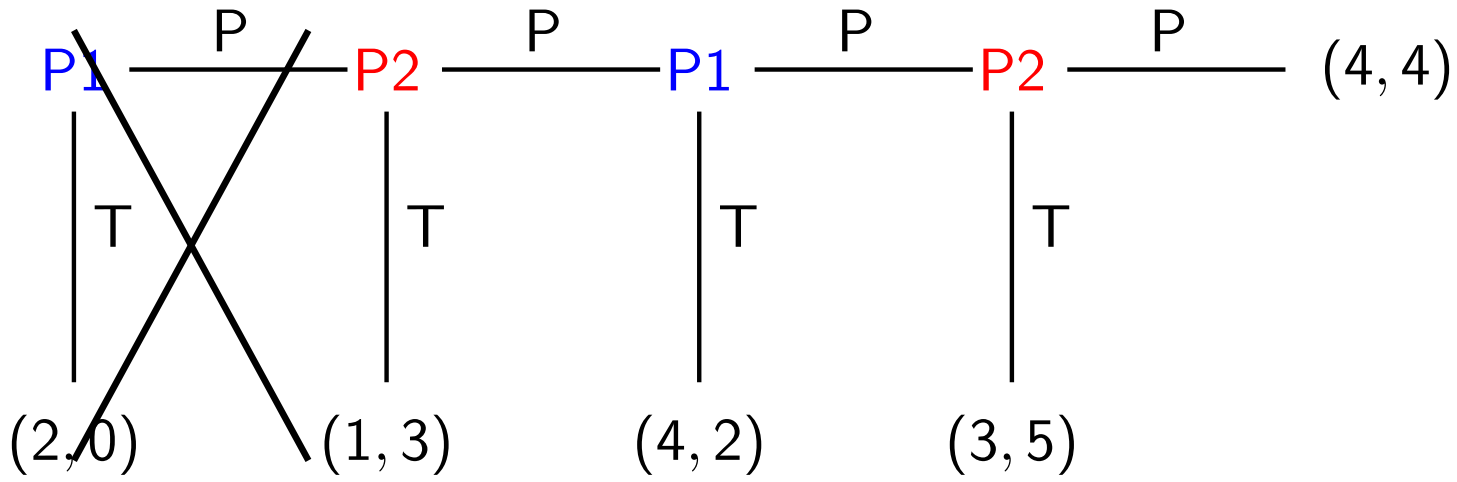
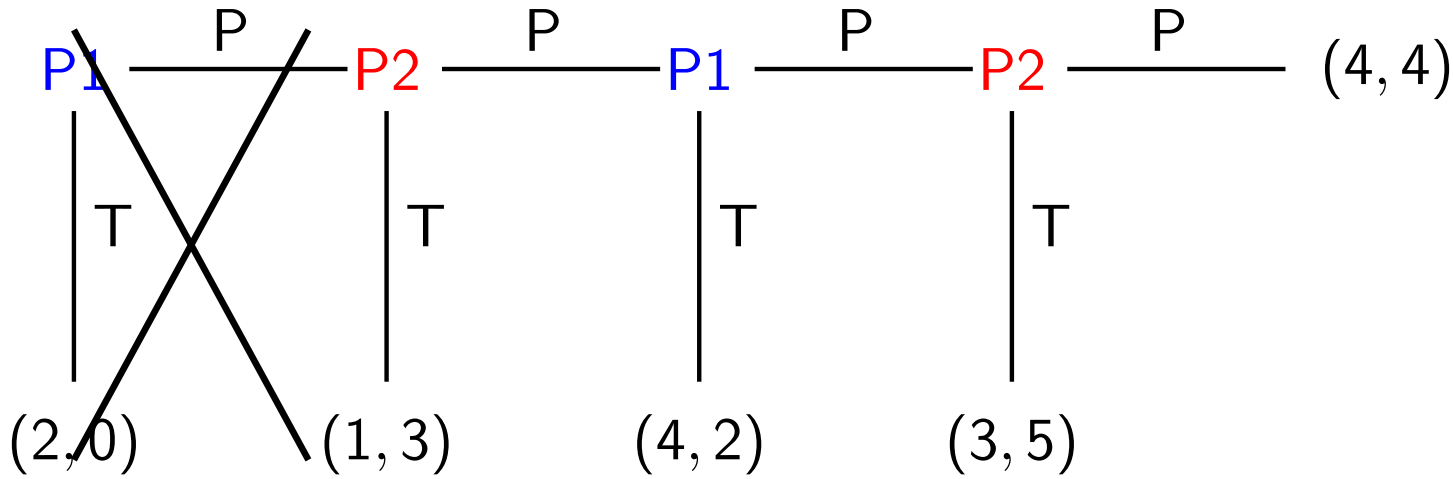
P
(4, 4)
T
T
T
T
(2, 0)
(1, 3)
(4, 2)
(3, 5)



$$\Leftrightarrow$$

$$S_1 = \{\_P, \_T\}$$

$$S_2 = \{PP, PT, TP, TT\}$$

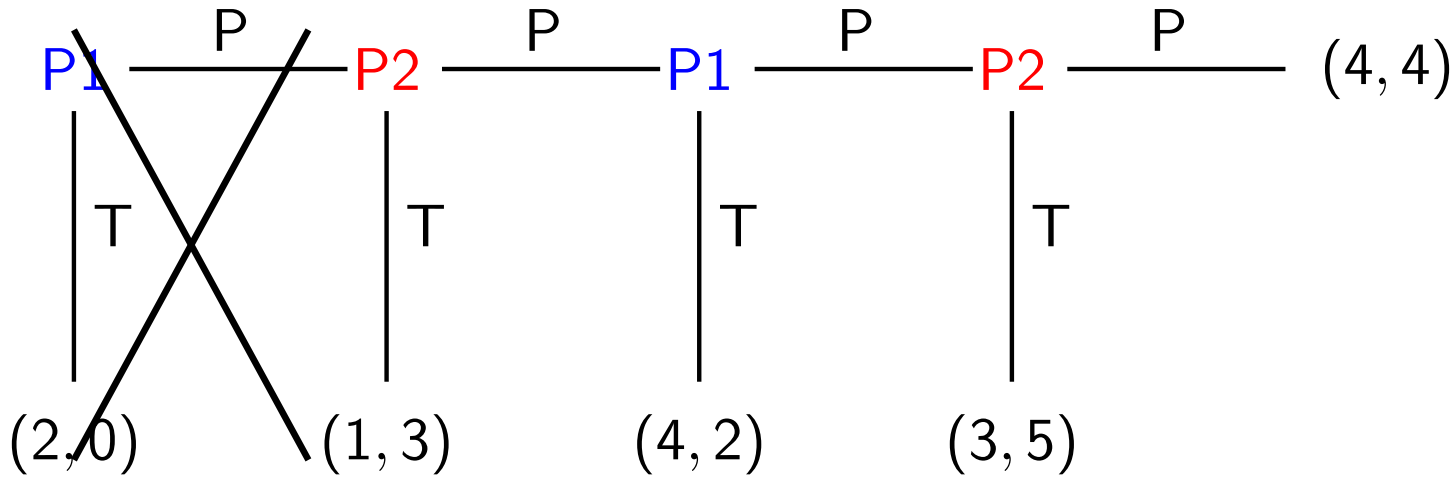


$$\Leftrightarrow$$

$$S_1 = \{\_P, \_T\}$$

$$S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (4,4) & (3,5) & (1,3) & (1,3) \\ (4,2) & (4,2) & (1,3) & (1,3) \end{pmatrix}$$

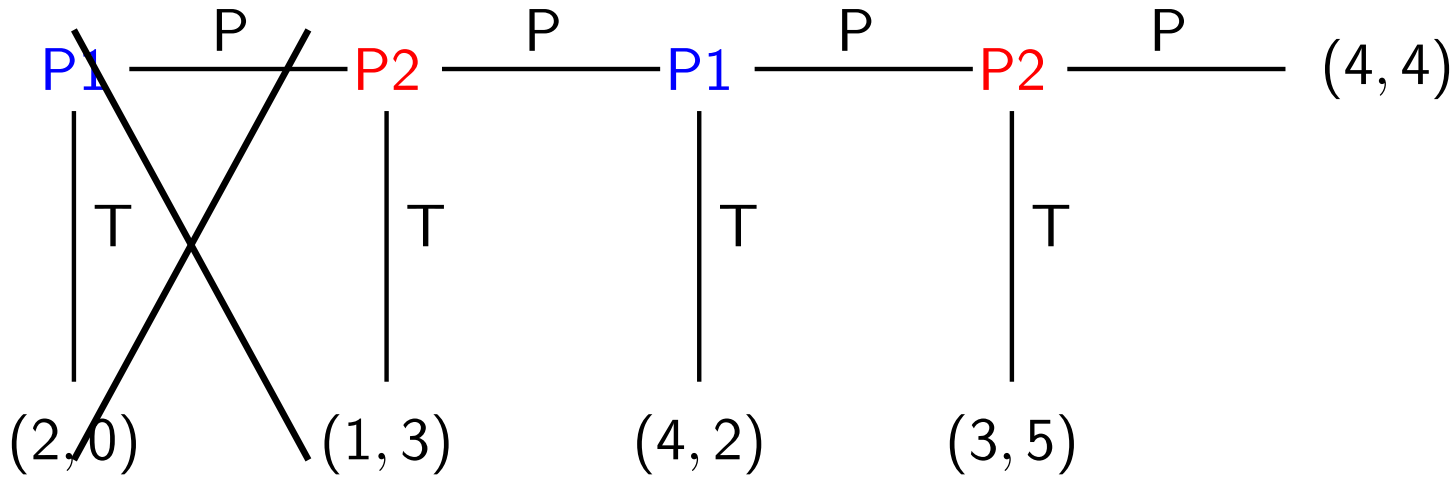


$$\Leftrightarrow$$

$$S_1 = \{\_P, \_T\}$$

$$S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) & (\underline{1}, 3) & (\underline{1}, 3) \\ (\underline{4}, 2) & (\underline{4}, 2) & (\underline{1}, \underline{3}) & (\underline{1}, \underline{3}) \end{pmatrix}$$



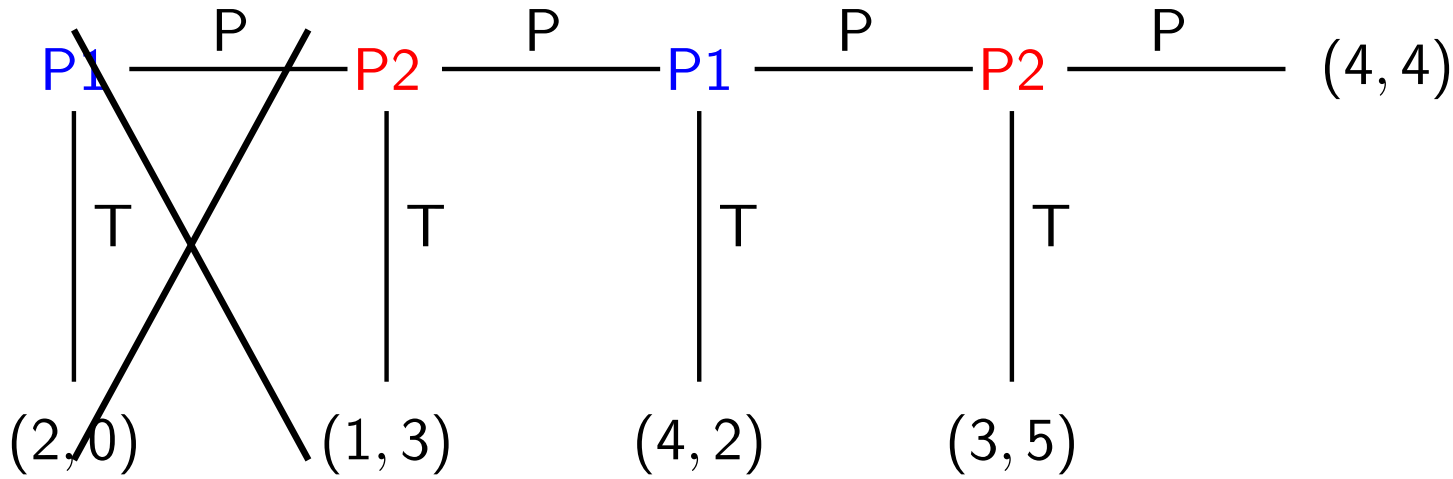
$$\Leftrightarrow$$

$$S_1 = \{\_P, \_T\}$$

$$S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) & (\underline{1}, 3) & (\underline{1}, 3) \\ (\underline{4}, 2) & (\underline{4}, 2) & (\underline{1}, \underline{3}) & (\underline{1}, \underline{3}) \end{pmatrix}$$

Nash equilibrium: $\{(\_\mathrm{T}, \mathrm{TP}), (\_\mathrm{T}, \mathrm{TT})\}$.



$$\Leftrightarrow$$

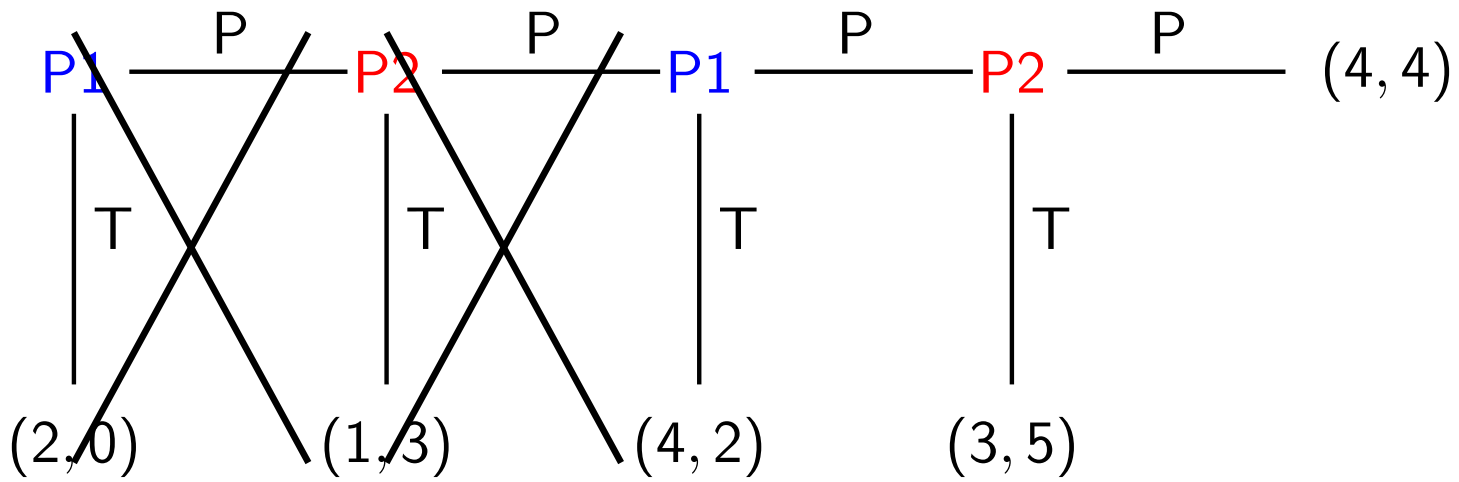
$$S_1 = \{\_P, \_T\}$$

$$S_2 = \{PP, PT, TP, TT\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) & (\underline{1}, 3) & (\underline{1}, 3) \\ (\underline{4}, 2) & (\underline{4}, 2) & (\underline{1}, \underline{3}) & (\underline{1}, \underline{3}) \end{pmatrix}$$

Nash equilibrium: $\{(\_\mathrm{T}, \mathrm{TP}), (\_\mathrm{T}, \mathrm{TT})\}$.

Original equilibrium: $\{(\mathrm{TT}, \mathrm{TT}), \cancel{(\mathrm{TP}, \mathrm{TT})}, (\mathrm{TT}, \mathrm{TP}), \cancel{(\mathrm{TP}, \mathrm{TP})}\}$.


P1
P
P2
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P1
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P2
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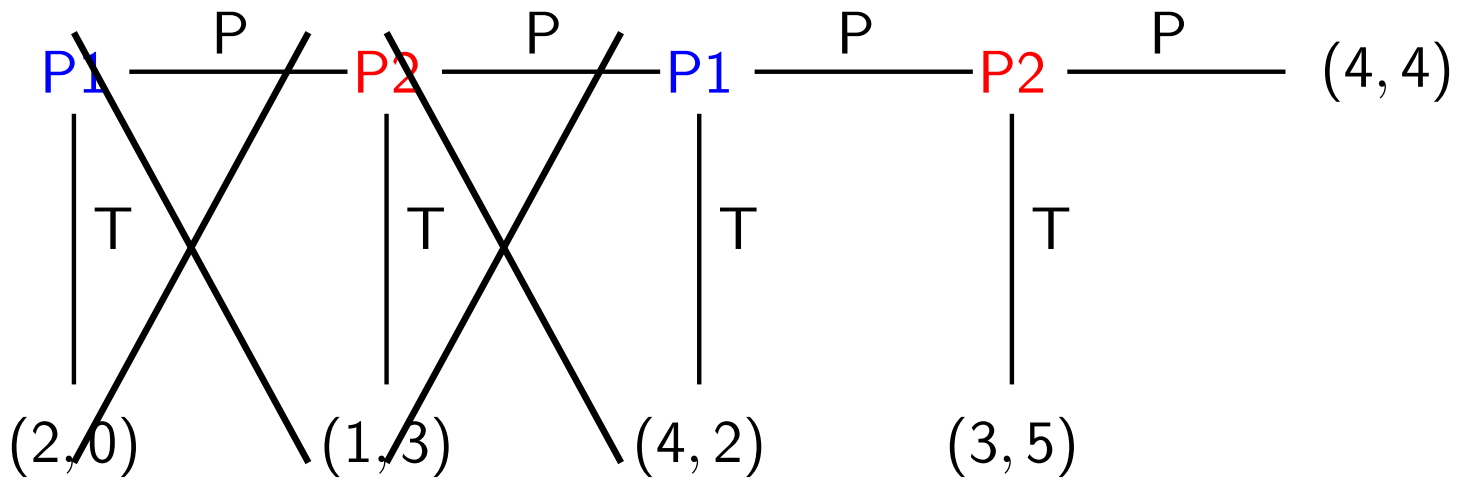
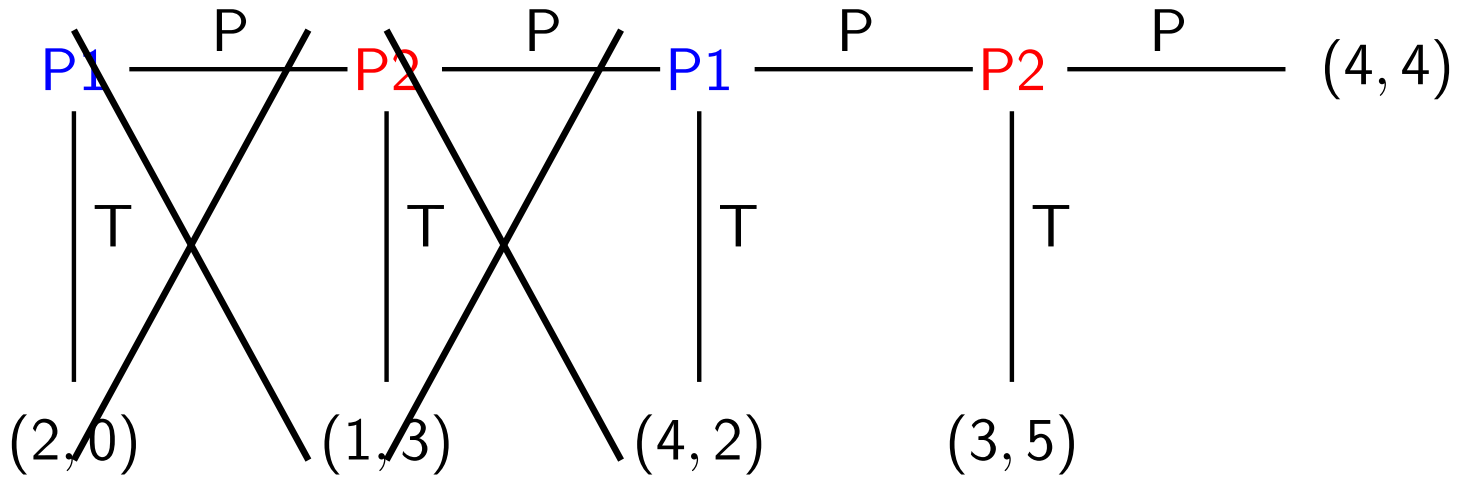
(4, 4)
T
T
T
T
(2, 0)
(1, 3)
(4, 2)
(3, 5)



$$\Leftrightarrow$$

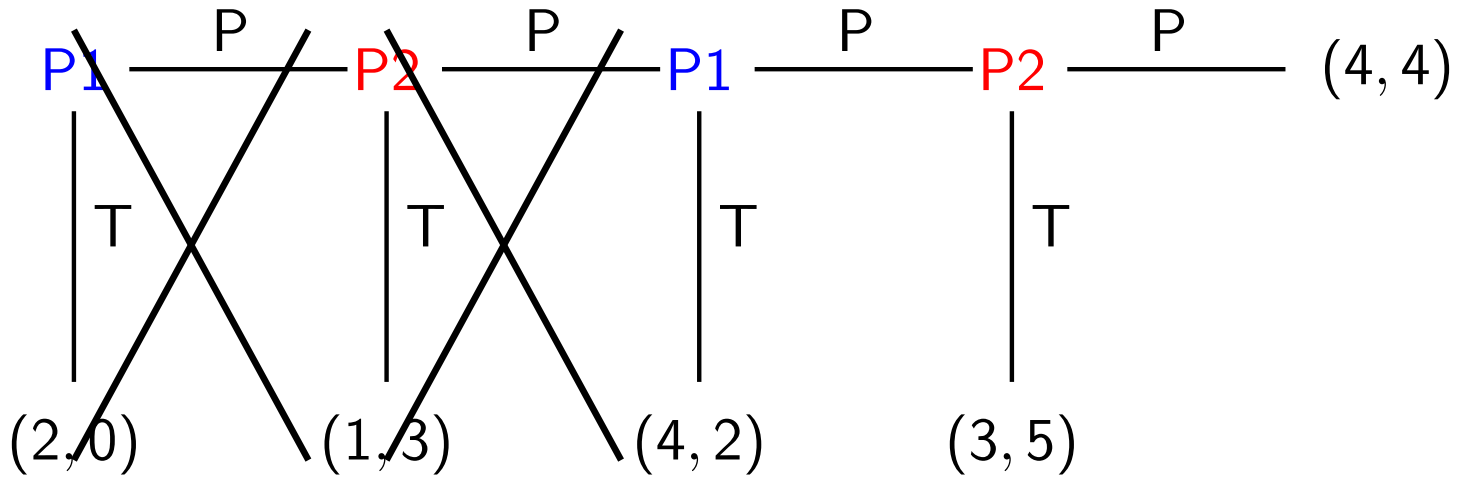
$$S_1 = S_2 = \{\_P, \_T\}$$



$$\Leftrightarrow$$

$$S_1 = S_2 = \{\_P, \_T\}$$

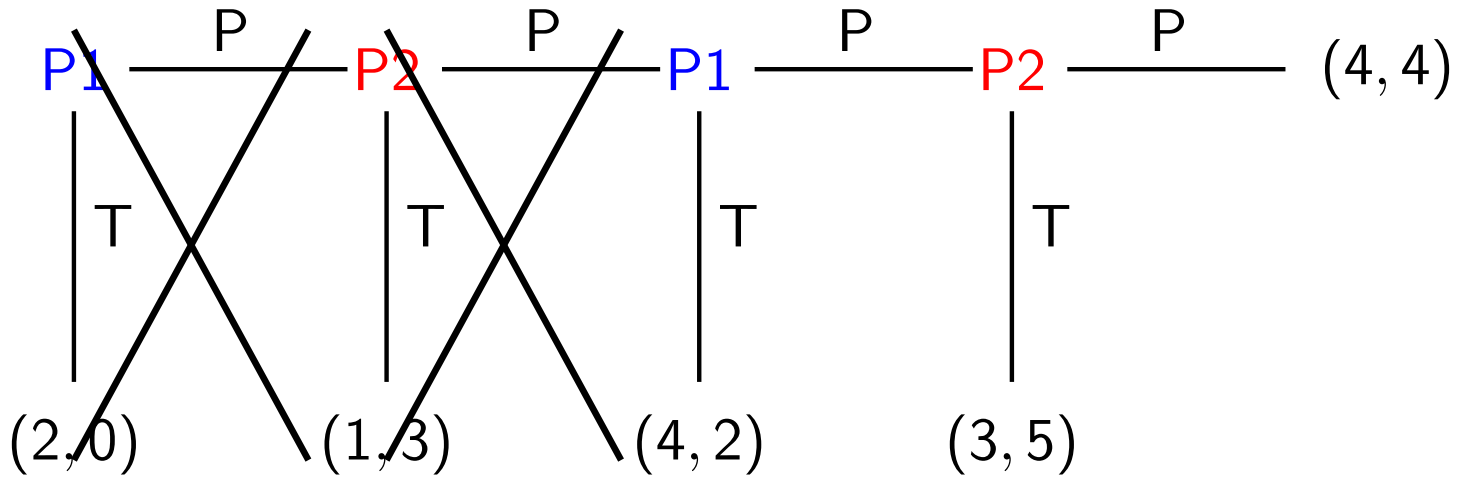
$$\begin{pmatrix} (4,4) & (3,5) \\ (4,2) & (4,2) \end{pmatrix}$$



$$\Leftrightarrow$$

$$S_1 = S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) \\ (\underline{4}, \underline{2}) & (\underline{4}, \underline{2}) \end{pmatrix}$$

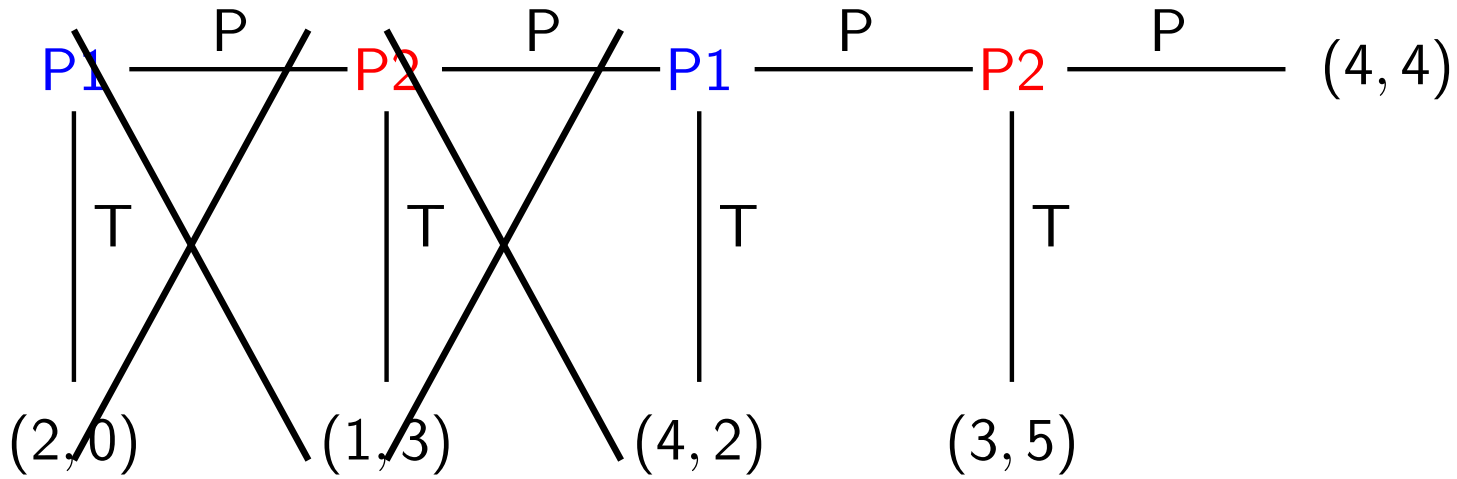


$$\Leftrightarrow$$

$$S_1 = S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) \\ (\underline{4}, \underline{2}) & (\underline{4}, \underline{2}) \end{pmatrix}$$

Nash equilibrium: $\{(\_\mathrm{T}, \_\mathrm{P}), (\_\mathrm{T}, \_\mathrm{T})\}$.



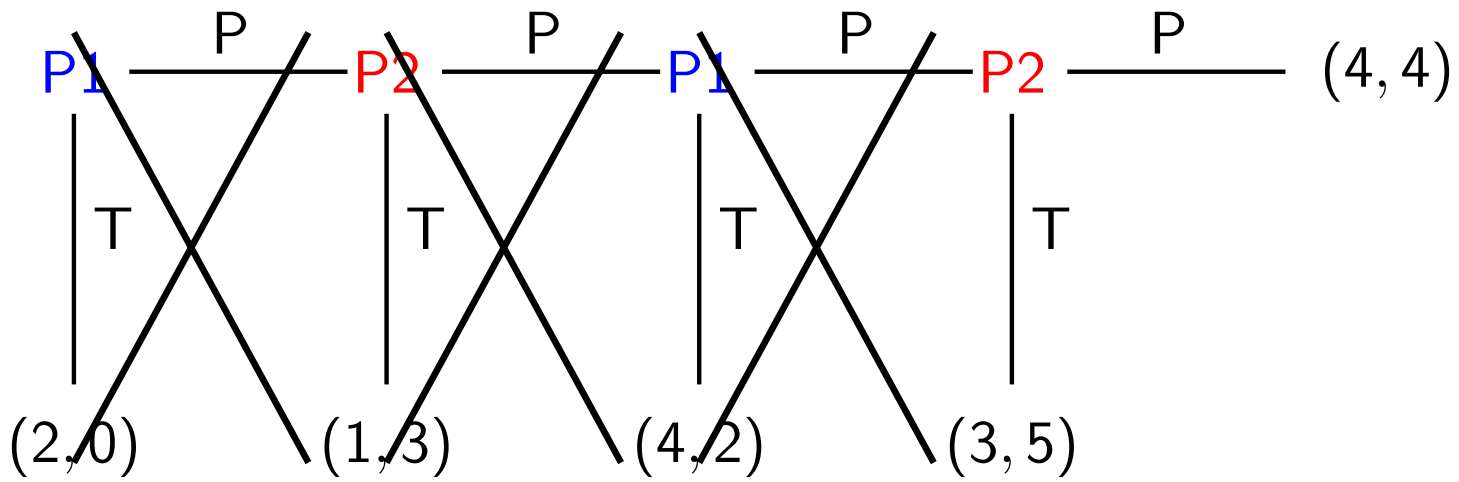
$$\Leftrightarrow$$

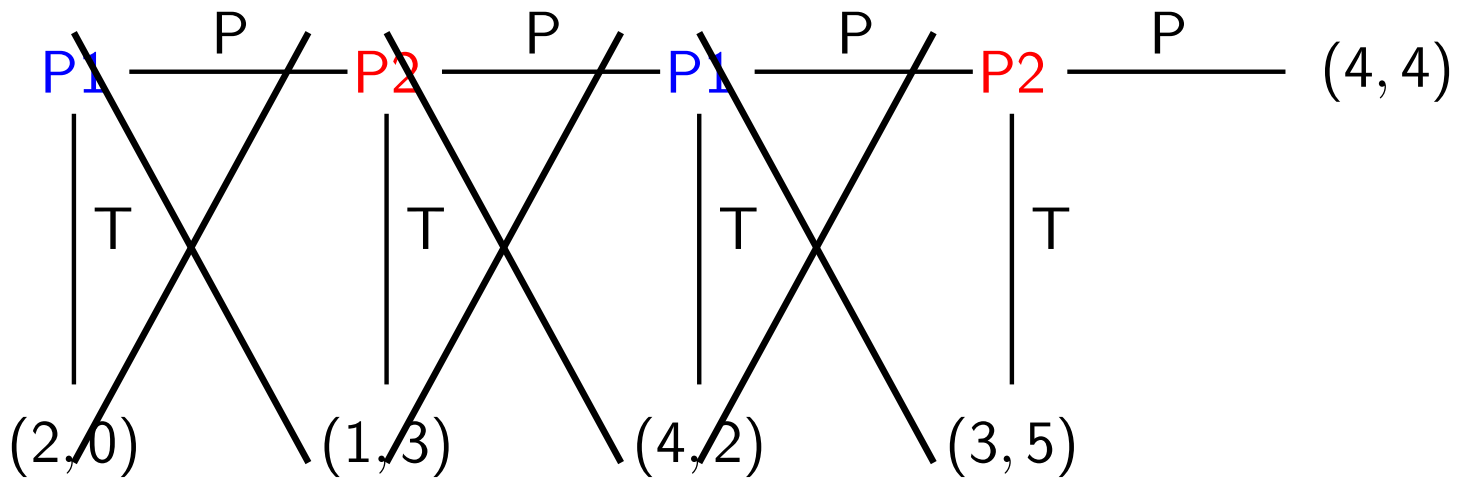
$$S_1 = S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (\underline{4}, 4) & (3, \underline{5}) \\ (\underline{4}, \underline{2}) & (\underline{4}, \underline{2}) \end{pmatrix}$$

Nash equilibrium: $\{(\_\mathrm{T}, \_\mathrm{P}), (\_\mathrm{T}, \_\mathrm{T})\}$.

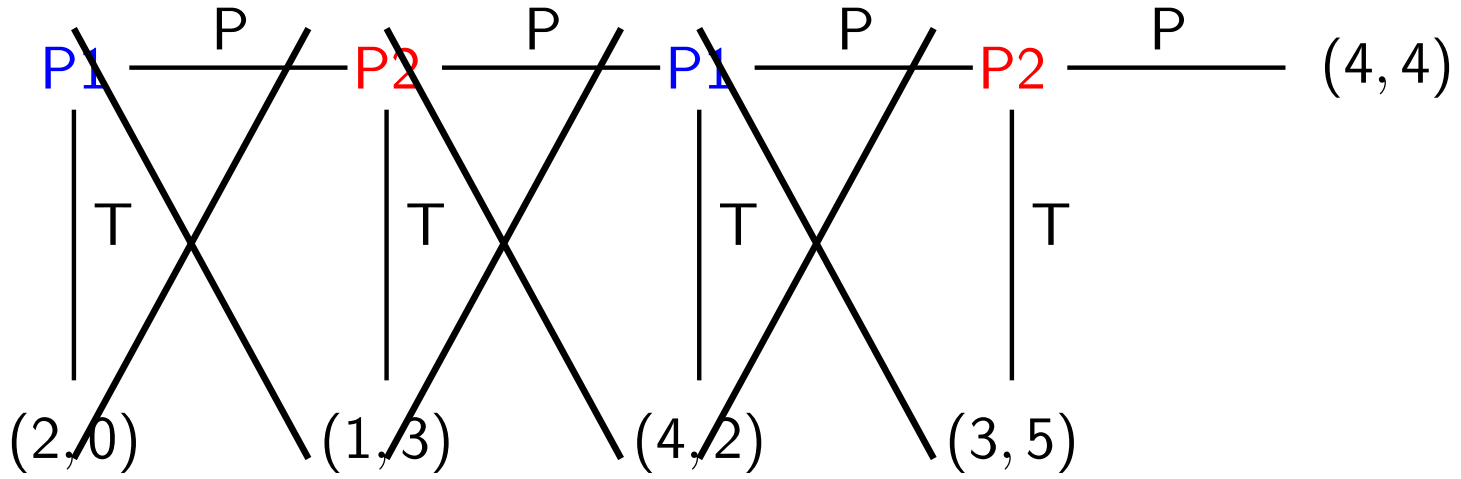
Original equilibrium: $\{(\mathrm{TT}, \mathrm{TT}), \cancel{(\underline{\mathrm{TP}}, \mathrm{TT})}, (\mathrm{TT}, \mathrm{TP}), \cancel{(\underline{\mathrm{TP}}, \mathrm{TP})}\}$.


P1
P
P2
P
P1
P
P2
P
(4, 4)
T
T
T
T
(2, 0)
(1, 3)
(4, 2)
(3, 5)



$$\Leftrightarrow$$

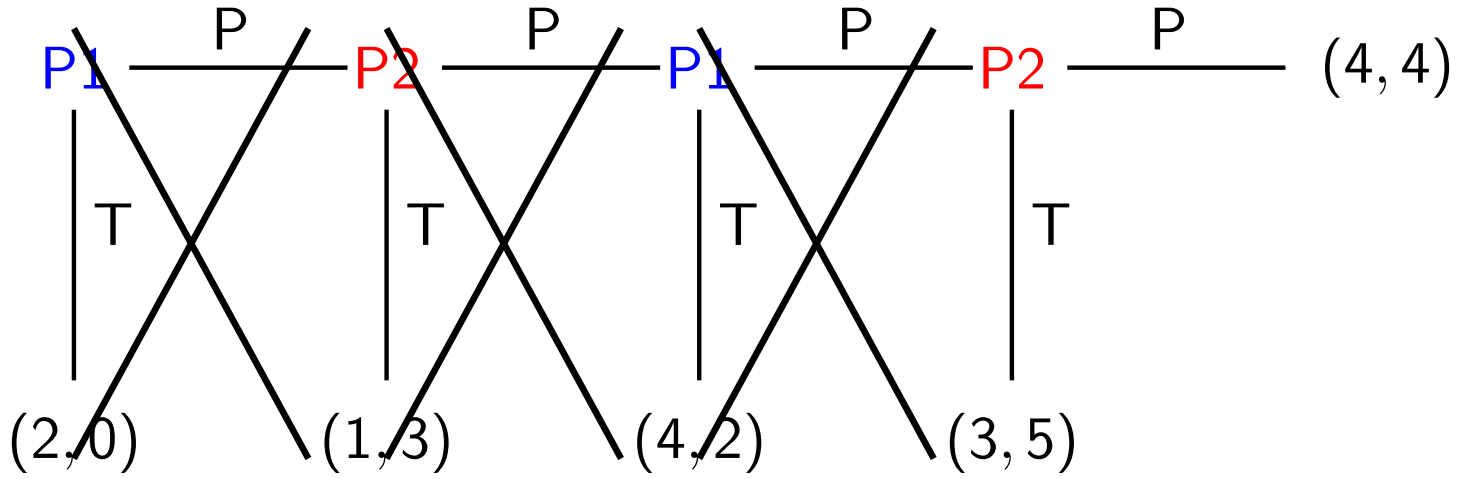
$$S_2 = \{\_P, \_T\}$$



$$\Leftrightarrow$$

$$S_2 = \{\_P, \_T\}$$

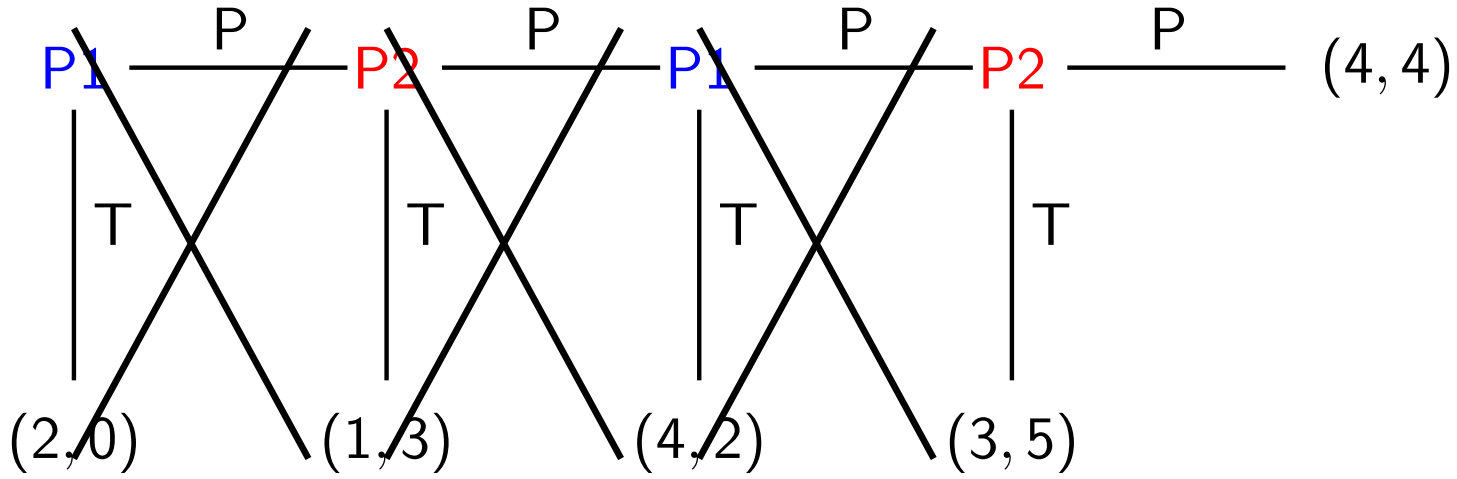
$$\begin{pmatrix} (4,4) & (3,5) \end{pmatrix}$$



$$\Leftrightarrow$$

$$S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (4,4) & (3,\underline{5}) \end{pmatrix}$$

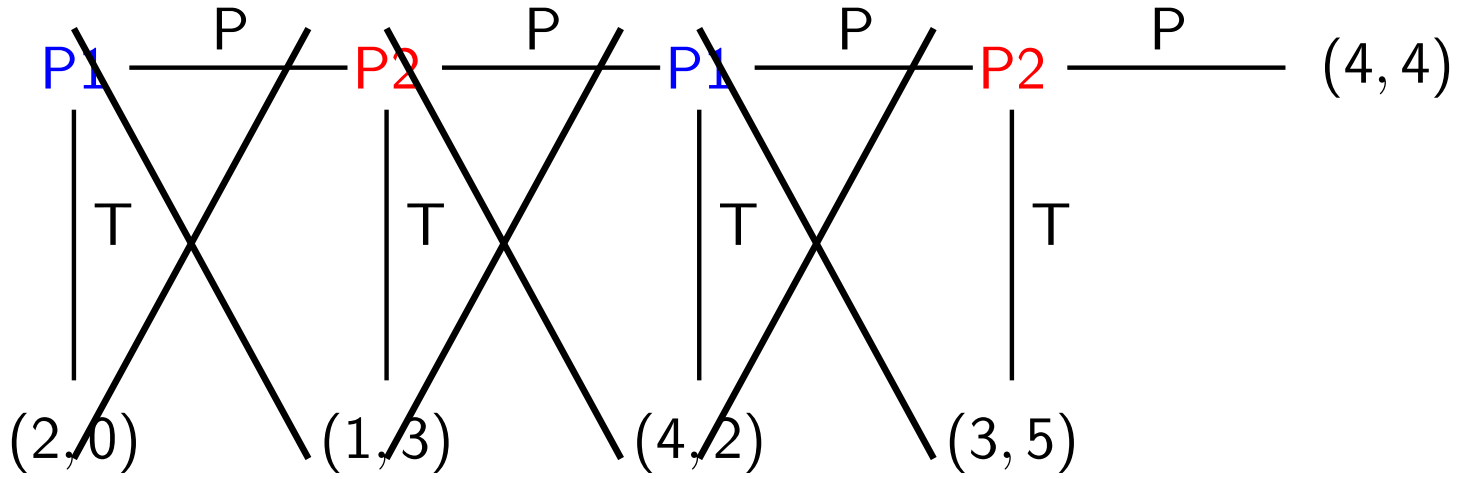


$\Leftrightarrow$

$$S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (4,4) & (3,\underline{5}) \end{pmatrix}$$

Nash equilibrium: $\{\_\mathrm{T}\}$.



$$\Leftrightarrow$$

$$S_2 = \{\_P, \_T\}$$

$$\begin{pmatrix} (4,4) & (3,\underline{5}) \end{pmatrix}$$

Nash equilibrium: $\{\_\mathrm{T}\}$.

Original equilibrium: $\{(\mathrm{TT},\mathrm{TT}), \cancel{(\mathrm{TP},\mathrm{TT})}, \cancel{(\mathrm{TT},\mathrm{TP})}, \cancel{(\mathrm{TP},\mathrm{TP})}\}$.