

New Graph

[6, 6, 6, 6, 6, 5], [4, 4, 5, 1, 2, 3]

$$\pi = [1, 3, 4, 2, 6, 8]$$

$$\delta = [1, 1, 1, 2, 2, 5]$$

POSSIBLE RANKS

- 1 x 24
- 2 x 12
- 3 x 8
- 4 x 6

BASE DETERMINANT 147/1024, .1435546875

NullSpace of Δ

{1, 2, 3, 4, 5, 6}

Nullspace of A

[{3, 6}, {1, 2, 4, 5}]

1 . Coloring, {}

R: [6, 6, 6, 6, 6, 5]
 B: [4, 4, 5, 1, 2, 3]

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	2 vs 2	5 vs 5

Omega Rank for R :

$$-t \quad t^3$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 0 & 0 & 8 & 16 \\ 0 & 0 & 0 & 0 & 16 & 8 \end{pmatrix}$$

$$[0, 0, 0, 0, y_1, y_2]$$

Omega Rank for B :

$$-t^4 \quad t^6$$

, cycles: {{1, 4}} order: 4

$$\begin{pmatrix} 2 & 6 & 8 & 4 & 4 & 0 \\ 4 & 4 & 0 & 8 & 8 & 0 \\ (8 & 8 & 0 & 8 & 0 & 0) \\ 8 & 0 & 0 & 16 & 0 & 0 \\ 16 & 0 & 0 & 8 & 0 & 0 \end{pmatrix}$$

$$[y_1, y_2, y_3, y_4, y_5, 0]$$

2. Coloring, {2}

R: [6, 4, 6, 6, 6, 5]
 B: [4, 6, 5, 1, 2, 3]

\ See graph

\ \ See pair graph

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
5 vs 5	6 vs 6	6 vs 6	3 vs 3	4 vs 6

Omega Rank for R :

$$-t^2 + t^4$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 0 & 3 & 8 & 13 \\ (0 & 0 & 0 & 0 & 13 & 11) \\ 0 & 0 & 0 & 0 & 11 & 13 \end{pmatrix}$$

$$[0, 0, 0, y_1, y_2, y_3]$$

Omega Rank for B :

$$-1 + t^4$$

, cycles: {{2, 3, 5, 6}, {1, 4}} order: 4

$$\begin{pmatrix} 2 & 6 & 8 & 1 & 4 & 3 \\ 1 & 4 & 3 & 2 & 8 & 6 \\ (2 & 8 & 6 & 1 & 3 & 4) \\ 1 & 3 & 4 & 2 & 6 & 8 \\ 2 & 6 & 8 & 1 & 4 & 3 \\ 1 & 4 & 3 & 2 & 8 & 6 \end{pmatrix}$$

$$[y_1, {}^7y_1 - y_2, y_2, y_3, {}^7y_3 - y_4, y_4]$$

$$p' = -1 + s^4 \quad p' = -s + s^5$$

3. Coloring, {3}

$\Omega p(\Delta)=0: p' = s^3 - 2s^4 \quad p = s^3 - 4s^5$

R: [6, 6, 5, 6, 6, 5]
 B: [4, 4, 6, 1, 2, 3]

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
3 vs 5	3 vs 5	3 vs 5	1 vs 2	3 vs 5

Omega Rank for R :

$-t \quad t^3$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 0 & 0 & 12 & 12 \\ 0 & 0 & 0 & 0 & 12 & 12 \end{pmatrix}$$

[0, 0, 0, 0, y_1, y_1]

$p = -s^+ \quad s^2$

Omega Rank for B :

$-t^2 \quad t^4$

, cycles: {{3, 6}, {1, 4}} order: 2

$$\begin{pmatrix} 2 & 6 & 8 & 4 & 0 & 4 \\ 4 & 0 & 4 & 8 & 0 & 8 \\ (8 & 0 & 8 & 4 & 0 & 4) \\ 4 & 0 & 4 & 8 & 0 & 8 \\ 8 & 0 & 8 & 4 & 0 & 4 \end{pmatrix}$$

$[-y_1 + y_2, y_1, y_2, y_3, 0, y_3]$

$p' = -s^{2+} \quad s^4 \quad p = -s^{2+} \quad s^4$

M N

$$\begin{pmatrix} 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 3 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 1 \\ 1 & 3 & 0 & 0 & 0 & 0 & 1 & 1 & 0 & 1 & 1 & 0 \\ (0 & 0 & 0 & 0 & 0 & 2) & (0 & 0 & 1 & 0 & 0 & 1) \\ 0 & 0 & 0 & 0 & 0 & 6 & 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 2 & 6 & 0 & 1 & 1 & 0 & 1 & 1 & 0 \end{pmatrix}$$

NM

$$\begin{pmatrix} 1 & 3 & 0 & 2 & 6 & 0 \\ 1 & 3 & 0 & 2 & 6 & 0 \\ 0 & 0 & 4 & 0 & 0 & 8 \\ 1 & 3 & 0 & 2 & 6 & 0 \\ 1 & 3 & 0 & 2 & 6 & 0 \\ 0 & 0 & 4 & 0 & 0 & 8 \end{pmatrix}$$

$\tau = 20, r' = 1/2$

R: [6, 6, 5, 6, 6, 5]
 B: [4, 4, 6, 1, 2, 3]

Ranges

Action of R on ranges, [[4], [4], [4], [4]]
 Action of B on ranges, [[3], [3], [1], [2]]

Cycles: R, {{5, 6}}, B, {{3, 6}, {1, 4}}

$\beta(\{1, 3\}) = 1/12$
 $\beta(\{2, 3\}) = 1/4$
 $\beta(\{4, 6\}) = 1/6$
 $\beta(\{5, 6\}) = 1/2$

Partitions

$\alpha(\{1, 2, 4, 5\}, \{3, 6\}) = 1/1$

$b_1 = \{1, 2, 4, 5\}, b_2 = \{3, 6\}$

Action of R and B on the blocks of the partitions: = [2, 1] [1, 2]
 with invariant measure [1, 1]

N by blocks, check: true . See partition graph.

See level-2 partition graph.

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Right Group	
Coloring	{3}
Rank	2
R,B	[6, 6, 5, 6, 6, 5], [4, 4, 6, 1, 2, 3]
π_2	[0, 1, 0, 0, 0, 3, 0, 0, 0, 0, 0, 0, 2, 6]
u_2	[0, 1, 0, 0, 1, 1, 0, 0, 1, 1, 1, 0, 0, 1, 1] (dim 1)
wpp	[4, 4, 2, 4, 4, 2]

4 . Coloring, {4}

R: [6, 6, 6, 1, 6, 5]
 B: [4, 4, 5, 6, 2, 3]

See graph

`` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	3 vs 3	5 vs 5

Ω_+ Rank for R :

$$-t^2 \quad t^4$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 0 & 8 & 14 \\ 0 & 0 & 0 & 0 & 14 & 10 \\ 0 & 0 & 0 & 0 & 10 & 14 \end{pmatrix}$$

$$[y_1, 0, 0, 0, y_2, y_3]$$

Ω_+ Rank for B :

$$-t \quad t^6$$

, cycles: {{2, 3, 4, 5, 6}} order: 5

$$\begin{pmatrix} 0 & 6 & 8 & 4 & 4 & 2 \\ 0 & 4 & 2 & 6 & 8 & 4 \\ 0 & 8 & 4 & 4 & 2 & 6 \\ 0 & 2 & 6 & 8 & 4 & 4 \\ 0 & 4 & 4 & 2 & 6 & 8 \end{pmatrix}$$

$$[0, y_1, y_2, y_3, y_4, y_5]$$

5 . Coloring, {5}

R: [6, 6, 6, 6, 2, 5]

B: [4, 4, 5, 1, 6, 3]

` See graph

`` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	3 vs 3	4 vs 5

Ω_+ Rank for R :

$$-t \quad t^4$$

, cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 6 & 0 & 0 & 8 & 10 \\ 0 & 8 & 0 & 0 & 10 & 6 \\ 0 & 10 & 0 & 0 & 6 & 8 \end{pmatrix}$$

$$[0, y_1, 0, 0, y_2, y_3]$$

Omega Rank for B :

$$-t - t^2 + t^4 + t^5$$

' cycles: {{3, 5, 6}, {1, 4}} order: 6

$$\begin{pmatrix} 2 & 0 & 8 & 4 & 4 & 6 \\ 4 & 0 & 6 & 2 & 8 & 4 \\ (2 & 0 & 4 & 4 & 6 & 8) \\ 4 & 0 & 8 & 2 & 4 & 6 \\ 2 & 0 & 6 & 4 & 8 & 4 \end{pmatrix}$$

$$[y_1, 0, 3y_1 + 3y_2 - y_3 - y_4, y_2, y_3, y_4]$$

$$p = s^+ s^2 - s^4 - s^5$$

6 . Coloring, {6}

R: [6, 6, 6, 6, 6, 3]

B: [4, 4, 5, 1, 2, 5]

` See graph

` ` See pair graph

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
5 vs 5	5 vs 5	5 vs 5	2 vs 2	4 vs 4

Omega Rank for R :

$$-t + t^3$$

' cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 8 & 0 & 0 & 16 \\ 0 & 0 & 16 & 0 & 0 & 8 \end{pmatrix}$$

$$[0, 0, y_1, 0, 0, y_2]$$

Omega Rank for B :

$$-t^3 + t^5$$

' cycles: {{1, 4}} order: 4

$$\begin{pmatrix} 2 & 6 & 0 & 4 & 12 & 0 \\ 4 & 12 & 0 & 8 & 0 & 0 \\ (8 & 0 & 0 & 16 & 0 & 0) \\ 16 & 0 & 0 & 8 & 0 & 0 \end{pmatrix}$$

$$[y_1, y_2, 0, y_3, y_4, 0]$$

7 . Coloring, {2, 3}

$$\Omega p(\Delta)=0: \quad p = s - 2s^2 - 4s^3 + 4s^4 + 8s^5$$

R: [6, 4, 5, 6, 6, 5]
 B: [4, 6, 6, 1, 2, 3]

[` See graph](#)

[`` See pair graph](#)

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
4 vs 5	5 vs 6	5 vs 6	3 vs 3	3 vs 5

Omega Rank for R :

$$-t^2 + t^4$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 0 & 3 & 12 & 9 \\ 0 & 0 & 0 & 0 & 9 & 15 \\ 0 & 0 & 0 & 0 & 15 & 9 \end{pmatrix}$$

$$[0, 0, 0, y_1, y_2, y_3]$$

Omega Rank for B :

$$-t^2 + t^4$$

, cycles: {{3, 6}, {1, 4}} order: 2

$$\begin{pmatrix} 2 & 6 & 8 & 1 & 0 & 7 \\ 1 & 0 & 7 & 2 & 0 & 14 \\ 2 & 0 & 14 & 1 & 0 & 7 \\ 1 & 0 & 7 & 2 & 0 & 14 \\ 2 & 0 & 14 & 1 & 0 & 7 \end{pmatrix}$$

$$[y_1, 7y_1 - y_2, y_2, y_3, 0, 7y_3]$$

$$p = s^2 - s^4 \quad p' = -s^2 + s^4$$

8 . Coloring, {2, 4}

R: [6, 4, 6, 1, 6, 5]
 B: [4, 6, 5, 6, 2, 3]

[` See graph](#)

[`` See pair graph](#)

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	5 vs 5

Omega Rank for R :

$$-t^3 + t^5$$

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cycles: {{5, 6}} order: 4

$$\begin{pmatrix} 2 & 0 & 0 & 3 & 8 & 11 \\ 3 & 0 & 0 & 0 & 11 & 10 \\ 0 & 0 & 0 & 0 & 10 & 14 \\ 0 & 0 & 0 & 0 & 14 & 10 \end{pmatrix}$$

$$[y_1, 0, 0, y_2, y_3, y_4]$$

Omega Rank for B :

$$-t^2 \quad t^6$$

cycles: {{2, 3, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 8 & 1 & 4 & 5 \\ 0 & 4 & 5 & 0 & 8 & 7 \\ 0 & 8 & 7 & 0 & 5 & 4 \\ 0 & 5 & 4 & 0 & 7 & 8 \\ 0 & 7 & 8 & 0 & 4 & 5 \end{pmatrix}$$

$$[0, y_5, y_3, y_4, y_2, y_1]$$

9. Coloring, {2, 5}

R: [6, 4, 6, 6, 2, 5]

B: [4, 6, 5, 1, 6, 3]

[` See graph](#)

[`` See pair graph](#)

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	4 vs 5

Omega Rank for R :

$$-t \quad t^5$$

cycles: {{2, 4, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 0 & 3 & 8 & 7 \\ 0 & 8 & 0 & 6 & 7 & 3 \\ 0 & 7 & 0 & 8 & 3 & 6 \\ 0 & 3 & 0 & 7 & 6 & 8 \end{pmatrix}$$

$$[0, y_1, 0, y_2, y_3, y_4]$$

Omega Rank for B :

$$-t - t^2 \quad t^4 \quad t^5$$

cycles: {{3, 5, 6}, {1, 4}} order: 6

2 0 8 1 4 9
 1 0 9 2 8 4
 (2 0 4 1 9 8)
 1 0 8 2 4 9
 2 0 9 1 8 4

$$[y_1, 0, y_4, y_2, 7y_1 - y_4 + 7y_2 - y_3, y_3]$$

$$p = -s - s^{2+} s^{4+} s^5$$

10 . Coloring, {2, 6}

R: [6, 4, 6, 6, 6, 3]
 B: [4, 6, 5, 1, 2, 5]

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	3 vs 3	4 vs 5

Omega Rank for R :

$$-t^{2+} t^4$$

' cycles: {{3, 6}} order: 2

0 0 8 3 0 13
 (0 0 13 0 0 11)
 0 0 11 0 0 13

$$[0, 0, y_1, y_2, 0, y_3]$$

Omega Rank for B :

$$-t - t^{2+} t^{4+} t^5$$

' cycles: {{1, 4}, {2, 5, 6}} order: 6

2 6 0 1 12 3
 1 12 0 2 3 6
 (2 3 0 1 6 12)
 1 6 0 2 12 3
 2 12 0 1 3 6

$$[y_1, 7y_1 + 7y_2 - y_3 - y_4, 0, y_2, y_3, y_4]$$

$$p = -s - s^{2+} s^{4+} s^5$$

11 . Coloring, {3, 4}

R: [6, 6, 5, 1, 6, 5]
 B: [4, 4, 6, 6, 2, 3]

\ See graph

\ \ See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	3 vs 3	3 vs 4

Omega Rank for R :

$$-t^2 + t^4$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 0 & 12 & 10 \\ 0 & 0 & 0 & 0 & 10 & 14 \\ 0 & 0 & 0 & 0 & 14 & 10 \end{pmatrix}$$

$$[y_1, 0, 0, 0, y_2, y_3]$$

Omega Rank for B :

$$-t^3 + t^5$$

, cycles: {{3, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 8 & 4 & 0 & 6 \\ 0 & 0 & 6 & 6 & 0 & 12 \\ 0 & 0 & 12 & 0 & 0 & 12 \\ 0 & 0 & 12 & 0 & 0 & 12 \end{pmatrix}$$

$$[0, y_3, y_2, y_3 - y_2 + y_1, 0, y_1]$$

$$p = -s^3 + s^4$$

12 . Coloring, {3, 5}

$$\Omega p(\Delta)=0: p = s^2 - 2s^4 - 4s^5$$

R: [6, 6, 5, 6, 2, 5]
 B: [4, 4, 6, 1, 6, 3]

\ See graph

\ \ See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
4 vs 5	4 vs 5	4 vs 5	3 vs 3	2 vs 4

Omega Rank for R :

$$-t + t^4$$

, cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 6 & 0 & 0 & 12 & 6 \\ 0 & 12 & 0 & 0 & 6 & 6 \\ 0 & 6 & 0 & 0 & 6 & 12 \end{pmatrix}$$

$$[0, y_1, 0, 0, y_2, y_3]$$

Omega Rank for B :

$$-t^+ t^3$$

' cycles: {{3, 6}, {1, 4}} order: 2

$$\begin{pmatrix} 2 & 0 & 8 & 4 & 0 & 10 \\ 4 & 0 & 10 & 2 & 0 & 8 \\ 2 & 0 & 8 & 4 & 0 & 10 \\ 4 & 0 & 10 & 2 & 0 & 8 \end{pmatrix}$$

$$[y_1, 0, y_2, -2y_1 + y_2, 0, -3y_1 + 2y_2]$$

$$p = s - s^3 \quad p' = -s^+ s^3$$

13 . Coloring, {3, 6}

R: [6, 6, 5, 6, 6, 3]
 B: [4, 4, 6, 1, 2, 5]

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	4 vs 5	3 vs 3	4 vs 5

Omega Rank for R :

$$-t^+ t^4$$

' cycles: {{3, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 0 & 8 & 0 & 4 & 12 \\ 0 & 0 & 12 & 0 & 8 & 4 \\ 0 & 0 & 4 & 0 & 12 & 8 \end{pmatrix}$$

$$[0, 0, y_1, 0, y_2, y_3]$$

Omega Rank for B :

$$-t^4 t^6$$

' cycles: {{1, 4}} order: 4

$$\begin{pmatrix} 2 & 6 & 0 & 4 & 8 & 4 \\ 4 & 8 & 0 & 8 & 4 & 0 \\ 8 & 4 & 0 & 12 & 0 & 0 \\ 12 & 0 & 0 & 12 & 0 & 0 \\ 12 & 0 & 0 & 12 & 0 & 0 \end{pmatrix}$$

$$p = -s^4 + s^5$$

$$[y_4, -y_4 + y_1 + y_2 - y_3, 0, y_1, y_2, y_3]$$

14 . Coloring, {4, 5}

$$\Omega p(\Delta)=0: \quad p = s^4 \quad p' = s^4$$

$$R: [6, 6, 6, 1, 2, 5]$$

$$B: [4, 4, 5, 6, 6, 3]$$

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
3 vs 5	3 vs 5	3 vs 5	2 vs 4	2 vs 4

Omega Rank for R :

$$-t^2 + t^5$$

' cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 2 & 6 & 0 & 0 & 8 & 8 \\ 0 & 8 & 0 & 0 & 8 & 8 \\ 0 & 8 & 0 & 0 & 8 & 8 \\ 0 & 8 & 0 & 0 & 8 & 8 \end{pmatrix}$$

$$[y_2, y_1, 0, 0, y_2 + y_1, y_2 + y_1]$$

$$p = -s^2 + s^3 \quad p = -s^2 + s^4$$

Omega Rank for B :

$$-t^2 + t^5$$

' cycles: {{3, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 0 & 8 & 4 & 4 & 8 \\ 0 & 0 & 8 & 0 & 8 & 8 \\ 0 & 0 & 8 & 0 & 8 & 8 \\ 0 & 0 & 8 & 0 & 8 & 8 \end{pmatrix}$$

$$[0, 0, y_2, y_2 - y_1, y_1, y_2]$$

$$p = -s^2 + s^4 \quad p = -s^2 + s^3$$

` See 3-level graph

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M N

0	0	0	0	1	1	0	0	0	1	1	1
0	0	0	0	3	3	0	0	0	1	1	1
0	0	0	2	2	4	0	0	0	1	1	1
0	0	2	0	0	2	1	1	1	0	0	1
1	3	2	0	0	6	1	1	1	0	0	1
1	3	4	2	6	0	1	1	1	1	1	0
NM											
2	6	8	2	6	8						
2	6	8	2	6	8						
2	6	8	2	6	8						
1	3	4	4	12	8						
1	3	4	4	12	8						
1	3	4	2	6	16						

$\tau = 14, r' = 2/3$

R: [6, 6, 6, 1, 2, 5]
 B: [4, 4, 5, 6, 6, 3]

Ranges

Action of R on ranges, [[2], [2], [1], [2]]
 Action of B on ranges, [[3], [3], [4], [4]]

Cycles: R, {{2, 5, 6}}, B, {{3, 5, 6}}

- $\beta(\{1, 5, 6\}) = 1/8$
- $\beta(\{2, 5, 6\}) = 3/8$
- $\beta(\{3, 4, 6\}) = 1/4$
- $\beta(\{3, 5, 6\}) = 1/4$

Partitions

$\alpha(\{\{4, 5\}, \{6\}, \{1, 2, 3\}\}) = 1/1$

$b_1 = \{4, 5\}, b_2 = \{6\}, b_3 = \{1, 2, 3\}$

Action of R and B on the blocks of the partitions: = [2, 3, 1] [3, 1, 2]
 with invariant measure [1, 1, 1]

N by blocks, check: true. See partition graph.

See level-3 partition graph.

Right Group	
Coloring	{4, 5}
Rank	3
R,B	[6, 6, 6, 1, 2, 5], [4, 4, 5, 6, 6, 3]
π_2	[0, 0, 0, 1, 1, 0, 0, 3, 3, 2, 2, 4, 0, 2, 6]
u_2	[0, 0, 1, 1, 1, 0, 1, 1, 1, 1, 1, 1, 0, 1, 1] (dim 1)
wpp	[3, 3, 3, 2, 2, 1]

π_3	[0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 3, 0, 2, 2, 0]
u_3	[0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 1, 0, 1, 1, 0]

15 . Coloring, {4, 6}

R: [6, 6, 6, 1, 6, 3]
 B: [4, 4, 5, 6, 2, 5]

` See graph

` ` See pair graph

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
5 vs 5	5 vs 5	5 vs 5	3 vs 3	4 vs 4

Omega Rank for R :

$$-t^2 + t^4$$

, cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 8 & 0 & 0 & 14 \\ 0 & 0 & 14 & 0 & 0 & 10 \\ 0 & 0 & 10 & 0 & 0 & 14 \end{pmatrix}$$

$$[y_1, 0, y_2, 0, 0, y_3]$$

Omega Rank for B :

$$-t + t^5$$

, cycles: {{2, 4, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 0 & 4 & 12 & 2 \\ 0 & 12 & 0 & 6 & 2 & 4 \\ 0 & 2 & 0 & 12 & 4 & 6 \\ 0 & 4 & 0 & 2 & 6 & 12 \end{pmatrix}$$

$$[0, y_1, 0, y_2, y_3, y_4]$$

16 . Coloring, {5, 6}

R: [6, 6, 6, 6, 2, 3]
 B: [4, 4, 5, 1, 6, 5]

` See graph

` ` See pair graph

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Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B

5 vs 5	5 vs 5	5 vs 5	3 vs 3	2 vs 4
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Omega Rank for R :

$$-t^2 \quad t^4$$

, cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 0 & 6 & 8 & 0 & 0 & 10 \\ 0 & 0 & 10 & 0 & 0 & 14 \\ 0 & 0 & 14 & 0 & 0 & 10 \end{pmatrix}$$

$$[0, y_1, y_2, 0, 0, y_3]$$

Omega Rank for B :

$$-t \quad t^3$$

, cycles: {{5, 6}, {1, 4}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 4 & 12 & 6 \\ 4 & 0 & 0 & 2 & 6 & 12 \\ 2 & 0 & 0 & 4 & 12 & 6 \\ 4 & 0 & 0 & 2 & 6 & 12 \end{pmatrix}$$

$$[y_1, 0, 0, y_2, 3y_2, 3y_1]$$

$$p = -s^+ s^3 \quad p' = -s^+ s^3$$

17. Coloring, {2, 3, 4}

R: [6, 4, 5, 1, 6, 5]
B: [4, 6, 6, 6, 2, 3]

` See graph

` ` See pair graph

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Δ-Rank	A+(1/2)Δ	A-(1/2)Δ	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	3 vs 4

Omega Rank for R :

$$-t^3 \quad t^5$$

, cycles: {{5, 6}} order: 4

$$\begin{pmatrix} 2 & 0 & 0 & 3 & 12 & 7 \\ 3 & 0 & 0 & 0 & 7 & 14 \\ 0 & 0 & 0 & 0 & 14 & 10 \\ 0 & 0 & 0 & 0 & 10 & 14 \end{pmatrix}$$

$$[y_1, 0, 0, y_2, y_3, y_4]$$

Omega Rank for B :

$$\text{tailcheck } -t^2 \quad t^4$$

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cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 0 & 6 & 8 & 1 & 0 & 9 \\ 0 & 0 & 9 & 0 & 0 & 15 \\ 0 & 0 & 15 & 0 & 0 & 9 \\ 0 & 0 & 9 & 0 & 0 & 15 \end{pmatrix}$$

$$[0, 6y_2, y_1, y_2, 0, y_3]$$

$$p = -s^2 + s^4$$

18 . Coloring, {2, 3, 5}

$$\Omega p(\Delta)=0: p = s - 4s^4 - 8s^5$$

R: [6, 4, 5, 6, 2, 5]
 B: [4, 6, 6, 1, 6, 3]

` See graph

` ` See pair graph

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Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
4 vs 5	5 vs 6	5 vs 6	4 vs 4	2 vs 4

Ω Rank for R :

$$-t + t^5$$

cycles: {{2, 4, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 0 & 3 & 12 & 3 \\ 0 & 12 & 0 & 6 & 3 & 3 \\ 0 & 3 & 0 & 12 & 3 & 6 \\ 0 & 3 & 0 & 3 & 6 & 12 \end{pmatrix}$$

$$[0, y_1, 0, y_2, y_3, y_4]$$

Ω Rank for B :

$$-t + t^3$$

cycles: {{3, 6}, {1, 4}} order: 2

$$\begin{pmatrix} 2 & 0 & 8 & 1 & 0 & 13 \\ 1 & 0 & 13 & 2 & 0 & 8 \\ 2 & 0 & 8 & 1 & 0 & 13 \\ 1 & 0 & 13 & 2 & 0 & 8 \end{pmatrix}$$

$$[y_2, 0, y_2 + 6y_1, y_1, 0, 6y_2 + y_1]$$

$$p = -s + s^3 \quad p' = -s + s^3$$

19 . Coloring, {2, 3, 6}

R: [6, 4, 5, 6, 6, 3]
 B: [4, 6, 6, 1, 2, 5]

` See graph
 `` See pair graph
 ,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	4 vs 5

Omega Rank for R :
 $-t^2 + t^5$

, cycles: {{3, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 0 & 8 & 3 & 4 & 9 \\ 0 & 0 & 9 & 0 & 8 & 7 \\ 0 & 0 & 7 & 0 & 9 & 8 \\ 0 & 0 & 8 & 0 & 7 & 9 \end{pmatrix}$$

$$[0, 0, y_1, y_2, y_3, y_4]$$

Omega Rank for B :
 $-t - t^2 + t^4 + t^5$

, cycles: {{2, 5, 6}, {1, 4}} order: 6

$$\begin{pmatrix} 2 & 6 & 0 & 1 & 8 & 7 \\ 1 & 8 & 0 & 2 & 7 & 6 \\ 2 & 7 & 0 & 1 & 6 & 8 \\ 1 & 6 & 0 & 2 & 8 & 7 \\ 2 & 8 & 0 & 1 & 7 & 6 \end{pmatrix}$$

$$[y_1, 7y_1 + 7y_3 - y_4 - y_2, 0, y_3, y_4, y_2]$$

$$p = s^+ s^2 - s^4 - s^5$$

20 . Coloring, {2, 4, 5}

R: [6, 4, 6, 1, 2, 5]
 B: [4, 6, 5, 6, 6, 3]

` See graph
 `` See pair graph
 ,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	5 vs 5	4 vs 4

Omega Rank for R :
 $-t + t^6$

, cycles: {{1, 2, 4, 5, 6}} order: 5

2 6 0 3 8 5
 3 8 0 6 5 2
 (6 5 0 8 2 3)
 8 2 0 5 3 6
 5 3 0 2 6 8

$[y_3, y_2, 0, y_1, y_4, y_5]$

Omega Rank for B :

$$-t^{2+} t^5$$

,
 cycles: {{3, 5, 6}} order: 3

0 0 8 1 4 11
 0 0 11 0 8 5
 (0 0 5 0 11 8)
 0 0 8 0 5 11

$[0, 0, y_1, y_4, y_2, y_3]$

21 . Coloring, {2, 4, 6}

R: [6, 4, 6, 1, 6, 3]

B: [4, 6, 5, 6, 2, 5]

` See graph

` ` See pair graph

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	4 vs 4

Omega Rank for R :

$$-t^{3+} t^5$$

,
 cycles: {{3, 6}} order: 4

2 0 8 3 0 11
 3 0 11 0 0 10
 (0 0 10 0 0 14)
 0 0 14 0 0 10

$[y_4, 0, y_3, y_2, 0, y_1]$

Omega Rank for B :

$$-t^{2+} t^5$$

,
 cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 6 & 0 & 1 & 12 & 5 \\ 0 & 12 & 0 & 0 & 5 & 7 \\ 0 & 5 & 0 & 0 & 7 & 12 \\ 0 & 7 & 0 & 0 & 12 & 5 \end{pmatrix}$$

$$[0, y_1, 0, y_2, y_3, y_4]$$

22 . Coloring, {2, 5, 6}

R: [6, 4, 6, 6, 2, 3]
 B: [4, 6, 5, 1, 6, 5]

` See graph

` ` See pair graph

`

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	4 vs 4	2 vs 4

Omega Rank for R :

$$-t^3 + t^5$$

, cycles: {{3, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 8 & 3 & 0 & 7 \\ 0 & 0 & 7 & 6 & 0 & 11 \\ 0 & 0 & 11 & 0 & 0 & 13 \\ 0 & 0 & 13 & 0 & 0 & 11 \end{pmatrix}$$

$$[0, y_1, y_2, y_3, 0, y_4]$$

Omega Rank for B :

$$-t + t^3$$

, cycles: {{1, 4}, {5, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 1 & 12 & 9 \\ 1 & 0 & 0 & 2 & 9 & 12 \\ 2 & 0 & 0 & 1 & 12 & 9 \\ 1 & 0 & 0 & 2 & 9 & 12 \end{pmatrix}$$

$$[y_2, 0, 0, y_1, 5y_2 + 2y_1, 2y_2 + 5y_1]$$

$$p = -s + s^3 \quad p' = -s + s^3$$

23 . Coloring, {3, 4, 5}

R: [6, 6, 5, 1, 2, 5]
 B: [4, 4, 6, 6, 6, 3]

[` See graph](#)

[`` See pair graph](#)

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	4 vs 5	4 vs 4	2 vs 3

Omega Rank for R :

$$-t^2 + t^5$$

, cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 2 & 6 & 0 & 0 & 12 & 4 \\ 0 & 12 & 0 & 0 & 4 & 8 \\ 0 & 4 & 0 & 0 & 8 & 12 \\ 0 & 8 & 0 & 0 & 12 & 4 \end{pmatrix}$$

$$[y_1, y_2, 0, 0, y_3, y_4]$$

Omega Rank for B :

$$-t^2 + t^4$$

, cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 8 & 4 & 0 & 12 \\ 0 & 0 & 12 & 0 & 0 & 12 \\ 0 & 0 & 12 & 0 & 0 & 12 \end{pmatrix}$$

$$[0, 0, y_2, y_1, 0, y_2 + y_1]$$

$$p = -s^2 + s^3$$

24 . Coloring, {3, 4, 6}

R: [6, 6, 5, 1, 6, 3]

B: [4, 4, 6, 6, 2, 5]

[` See graph](#)

[`` See pair graph](#)

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	4 vs 4	3 vs 4

Omega Rank for R :

$$-t^2 + t^5$$

, cycles: {{3, 5, 6}} order: 3

$$\begin{pmatrix} 2 & 0 & 8 & 0 & 4 & 10 \\ 0 & 0 & 10 & 0 & 8 & 6 \\ 0 & 0 & 6 & 0 & 10 & 8 \\ 0 & 0 & 8 & 0 & 6 & 10 \end{pmatrix}$$

$$[y_1, 0, y_2, 0, y_3, y_4]$$

Omega Rank for B :

$$-t \quad t^5$$

, cycles: {{2, 4, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 0 & 4 & 8 & 6 \\ 0 & 8 & 0 & 6 & 6 & 4 \\ 0 & 6 & 0 & 8 & 4 & 6 \\ 0 & 4 & 0 & 6 & 6 & 8 \end{pmatrix}$$

$$[0, y_3, 0, y_2, y_3 - y_2 + y_1, y_1]$$

$$p = -s^+ \quad s^2 - s^3 \quad s^4$$

25 . Coloring, {3, 5, 6}

R: [6, 6, 5, 6, 2, 3]

B: [4, 4, 6, 1, 6, 5]

` See graph

` ` See pair graph

,

Δ-Rank	A+(1/2)Δ	A-(1/2)Δ	R	B
5 vs 5	5 vs 5	5 vs 5	4 vs 4	2 vs 4

Omega Rank for R :

$$-t \quad t^5$$

, cycles: {{2, 3, 5, 6}} order: 4

$$\begin{pmatrix} 0 & 6 & 8 & 0 & 4 & 6 \\ 0 & 4 & 6 & 0 & 8 & 6 \\ 0 & 8 & 6 & 0 & 6 & 4 \\ 0 & 6 & 4 & 0 & 6 & 8 \end{pmatrix}$$

$$[0, y_1, y_2, 0, y_3, y_4]$$

Omega Rank for B :

$$-t \quad t^3$$

, cycles: {{1, 4}, {5, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 4 & 8 & 10 \\ 4 & 0 & 0 & 2 & 10 & 8 \\ 2 & 0 & 0 & 4 & 8 & 10 \\ 4 & 0 & 0 & 2 & 10 & 8 \end{pmatrix}$$

$$[y_1, 0, 0, y_2, 2y_1 + y_2, y_1 + 2y_2]$$

$$p' = -s^{\top} s^3 \quad p = -s^{\top} s^3$$

26 . Coloring, {4, 5, 6}

R: [6, 6, 6, 1, 2, 3]
 B: [4, 4, 5, 6, 6, 5]

` See graph

` ` See pair graph

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	5 vs 5	5 vs 5	3 vs 4	3 vs 3

Omega Rank for R :

$$\text{tailcheck } -t^{2+} t^4$$

, cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 2 & 6 & 8 & 0 & 0 & 8 \\ 0 & 0 & 8 & 0 & 0 & 16 \\ 0 & 0 & 16 & 0 & 0 & 8 \\ 0 & 0 & 8 & 0 & 0 & 16 \end{pmatrix}$$

$$[y_2, {}^3 y_2, y_3, 0, 0, y_1]$$

$$p = -s^{2+} s^4$$

Omega Rank for B :

$$-t^{2+} t^4$$

, cycles: {{5, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 0 & 4 & 12 & 8 \\ 0 & 0 & 0 & 0 & 8 & 16 \\ 0 & 0 & 0 & 0 & 16 & 8 \end{pmatrix}$$

$$[0, 0, 0, y_3, y_2, y_1]$$

27 . Coloring, {2, 3, 4, 5}

R: [6, 4, 5, 1, 2, 5]
 B: [4, 6, 6, 6, 6, 3]

` See graph

` ` See pair graph

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	5 vs 5	3 vs 3

Omega Rank for R :

$$-t^+ t^6$$

, cycles: {{1, 2, 4, 5, 6}} order: 5

$$\begin{pmatrix} 2 & 6 & 0 & 3 & 12 & 1 \\ 3 & 12 & 0 & 6 & 1 & 2 \\ (6 & 1 & 0 & 12 & 2 & 3) \\ 12 & 2 & 0 & 1 & 3 & 6 \\ 1 & 3 & 0 & 2 & 6 & 12 \end{pmatrix}$$

$$[y_1, y_2, 0, y_3, y_4, y_5]$$

Omega Rank for B :

$$-t^{2+} t^4$$

, cycles: {{3, 6}} order: 2

$$\begin{pmatrix} 0 & 0 & 8 & 1 & 0 & 15 \\ (0 & 0 & 15 & 0 & 0 & 9) \\ 0 & 0 & 9 & 0 & 0 & 15 \end{pmatrix}$$

$$[0, 0, y_2, y_3, 0, y_1]$$

28 . Coloring, {2, 3, 4, 6}

R: [6, 4, 5, 1, 6, 3]

B: [4, 6, 6, 6, 2, 5]

` See graph

` ` See pair graph

,

Δ -Rank	A+(1/2) Δ	A-(1/2) Δ	R	B
5 vs 5	6 vs 6	6 vs 6	5 vs 5	4 vs 4

Omega Rank for R :

$$-t^{3+} t^6$$

, cycles: {{3, 5, 6}} order: 3

$$\begin{pmatrix} 2 & 0 & 8 & 3 & 4 & 7 \\ 3 & 0 & 7 & 0 & 8 & 6 \\ (0 & 0 & 6 & 0 & 7 & 11) \\ 0 & 0 & 11 & 0 & 6 & 7 \\ 0 & 0 & 7 & 0 & 11 & 6 \end{pmatrix}$$

$$[y_1, 0, y_2, y_3, y_4, y_5]$$

Omega Rank for B :

$$-t^{2+} t^5$$

,

cycles: {{2, 5, 6}} order: 3

$$\begin{pmatrix} 0 & 6 & 0 & 1 & 8 & 9 \\ 0 & 8 & 0 & 0 & 9 & 7 \\ 0 & 9 & 0 & 0 & 7 & 8 \\ 0 & 7 & 0 & 0 & 8 & 9 \end{pmatrix}$$

$$[0, y_4, 0, y_2, y_3, y_1]$$

29 . Coloring, {2, 3, 5, 6}

R: [6, 4, 5, 6, 2, 3]
 B: [4, 6, 6, 1, 6, 5]

` See graph

` ` See pair graph

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	5 vs 5	2 vs 4

Ω_+ Rank for R :

$$-t \quad t^6$$

, cycles: {{2, 3, 4, 5, 6}} order: 5

$$\begin{pmatrix} 0 & 6 & 8 & 3 & 4 & 3 \\ 0 & 4 & 3 & 6 & 8 & 3 \\ 0 & 8 & 3 & 4 & 3 & 6 \\ 0 & 3 & 6 & 8 & 3 & 4 \\ 0 & 3 & 4 & 3 & 6 & 8 \end{pmatrix}$$

$$[0, y_4, y_1, y_2, y_5, y_3]$$

Ω_+ Rank for B :

$$-t \quad t^3$$

, cycles: {{1, 4}, {5, 6}} order: 2

$$\begin{pmatrix} 2 & 0 & 0 & 1 & 8 & 13 \\ 1 & 0 & 0 & 2 & 13 & 8 \\ 2 & 0 & 0 & 1 & 8 & 13 \\ 1 & 0 & 0 & 2 & 13 & 8 \end{pmatrix}$$

$$[-6 y_2 + y_1, 0, 0, y_2, y_1, -35 y_2 + 6 y_1]$$

$$p = s - s^3 \quad p' = -s + s^3$$

30 . Coloring, {2, 4, 5, 6}

R: [6, 4, 6, 1, 2, 3]
 B: [4, 6, 5, 6, 6, 5]

\ See graph
 `` See pair graph
 ,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	5 vs 5	3 vs 3

Omega Rank for R :

$$-t^4 + t^6$$

, cycles: {{3, 6}} order: 4

2 6 8 3 0 5
 3 0 5 6 0 10
 (6 0 10 0 0 8)
 0 0 8 0 0 16
 0 0 16 0 0 8

$$[y_1, y_2, y_3, y_4, 0, y_5]$$

Omega Rank for B :

$$-t^2 + t^4$$

, cycles: {{5, 6}} order: 2

0 0 0 1 12 11
 (0 0 0 0 11 13)
 0 0 0 0 13 11

$$[0, 0, 0, y_1, y_2, y_3]$$

31 . Coloring, {3, 4, 5, 6}

$$\Omega p(\Delta)=0: p = s^3 - 4s^5 \quad p' = s^{3+} 2s^4$$

R: [6, 6, 5, 1, 2, 3]
 B: [4, 4, 6, 6, 6, 5]

\ See graph
 `` See pair graph
 ,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
3 vs 5	3 vs 5	3 vs 5	3 vs 5	2 vs 3

Omega Rank for R :

$$-t^2 + t^6$$

, cycles: {{2, 3, 5, 6}} order: 4

2 6 8 0 4 4
 0 4 4 0 8 8
 (0 8 8 0 4 4)
 0 4 4 0 8 8
 0 8 8 0 4 4

$[-y_1 + y_2, y_1, y_2, 0, y_3, y_3]$

$p' = -s^{2+} s^4 \quad p = -s^{2+} s^4$

Omega Rank for B :

$-t^{2+} t^4$

'
 cycles: {{5, 6}} order: 2

0 0 0 4 8 12
 (0 0 0 0 12 12)
 0 0 0 0 12 12

$[0, 0, 0, y_2, -y_2 + y_1, y_1]$

$p = -s^{2+} s^3$

M N

0 0 1 0 0 0 0 0 3 2 2 1
 0 0 3 0 0 0 0 0 3 2 2 1
 (1 3 0 0 0 0) (3 3 0 1 1 2)
 (0 0 0 0 0 2) (2 2 1 0 0 3)
 0 0 0 0 0 6 2 2 1 0 0 3
 0 0 0 2 6 0 1 1 2 3 3 0

NM

3 9 0 2 6 16
 3 9 0 2 6 16
 (0 0 12 4 12 8)
 (1 3 8 6 18 0)
 1 3 8 6 18 0
 2 6 4 0 0 24

$\tau = 56 -- 3, r' = 1/2$

R: [6, 6, 5, 1, 2, 3]
 B: [4, 4, 6, 6, 6, 5]

Ranges

Action of R on ranges, $[[4], [4], [1], [2]]$
 Action of B on ranges, $[[3], [3], [4], [4]]$

Cycles: R, {{2, 3, 5, 6}}, B, {{5, 6}}

$\beta(\{1, 3\}) = 1/12$
 $\beta(\{2, 3\}) = 1/4$
 $\beta(\{4, 6\}) = 1/6$
 $\beta(\{5, 6\}) = 1/2$

Partitions

Action of R on partitions, $[[2], [1]]$
 Action of B on partitions, $[[1], [1]]$

$\alpha(\{\{3, 4, 5\}, \{1, 2, 6\}\}) = 2/3$
 $\alpha(\{\{1, 2, 4, 5\}, \{3, 6\}\}) = 1/3$

$b_1 = \{1, 2, 4, 5\}$, $b_2 = \{3, 6\}$, $b_3 = \{3, 4, 5\}$, $b_4 = \{1, 2, 6\}$

Action of R and B on the blocks of the partitions: = $[3, 4, 2, 1]$ $[4, 3, 4, 3]$
 with invariant measure $[1, 1, 2, 2]$

N by blocks, check: true . [See partition graph.](#)

[See level-2 partition graph.](#)

,

Sandwich	
Coloring	{3, 4, 5, 6}
Rank	2
R,B	[6, 6, 5, 1, 2, 3], [4, 4, 6, 6, 6, 5]
π_2	[0, 1, 0, 0, 0, 3, 0, 0, 0, 0, 0, 0, 2, 6]
u_2	[0, 3, 2, 2, 1, 3, 2, 2, 1, 1, 1, 2, 0, 3, 3] (dim 1)
wpp	[10, 10, 8, 10, 10, 8]

32 . Coloring, {2, 3, 4, 5, 6}

R: [6, 4, 5, 1, 2, 3]
 B: [4, 6, 6, 6, 6, 5]

[See graph](#)

[See pair graph](#)

,

Δ -Rank	$A+(1/2)\Delta$	$A-(1/2)\Delta$	R	B
5 vs 5	6 vs 6	6 vs 6	6 vs 6	3 vs 3

Ω Rank for R :

$-1 \quad t^6$

cycles: {{1, 2, 3, 4, 5, 6}} order: 6

2 6 8 3 4 1
 3 4 1 6 8 2
 (6 8 2 4 1 3)
 (4 1 3 8 2 6)
 8 2 6 1 3 4
 1 3 4 2 6 8

$[y_6, y_5, y_4, y_3, y_2, y_1]$

Omega Rank for B :

$$-t^2 + t^4$$

'cycles: {{5, 6}} order: 2

0 0 0 1 8 15
 (0 0 0 0 15 9)
 0 0 0 0 9 15

$[0, 0, 0, y_1, y_2, y_3]$

SUMMARY	
Graph Type	CC
$v(A)$	1
$v(\Delta)$	1
π	[1, 3, 4, 2, 6, 8]
Dbly Stoch	false

SANDWICH		Total 1
No .	Coloring	Rank
1	{3, 4, 5, 6}	2

RT GROUPS		Total 2	
No .	Coloring	Rank	Solv
1	{3}	2	Solvable
2	{4, 5}	3	Solvable

Δ -RANK'D	SC'D !RK'D	τ -RANK'D	R/B RANK'D	NOT SYNC'D	Total Runs	2^{n-1}
26	0	26 , 24	28 , 12	3	32	32
