

New Graph

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

$$\pi = [3, 3, 3, 1, 3, 2]$$

POSSIBLE RANKS

1 x 15

3 x 5

BASE DETERMINANT 163959/1048576, .1563634872

NullSpace of Δ

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

Nullspace of A

$$\det(A) = 1/32$$

1 . Coloring, {}

$$\Omega p(\Delta)=0: \quad p = s - 16s^5 \quad p' = s - 8s^4 \quad p'' = s^2 - 4s^4 \quad p''' = s^3 - 2s^4$$

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

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

[See graph](#)

[See pair graph](#)

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

Omega Rank for R : cycles: {{1, 3, 6}, {2, 5}} order: 6

[See Matrix](#)

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

$$p = -s + s^2 \quad p = -s + s^3 \quad p = -s + s^4 \quad p = -s + s^5$$

Omega Rank for B : cycles: {{4, 6}, {1, 2, 3, 5}} order: 4

[See Matrix](#)

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

$$p' = -1 + s^2 \quad p' = -1 + s^4 \quad p' = -s + s^3 \quad p' = -s + s^5$$

See 5-level graph

	M	N
	0 3 3 1 3 2	0 1 1 1 1 1
	3 0 3 1 3 2	1 0 1 1 1 1
	3 3 0 1 3 2	1 1 0 1 1 1
	[1 1 1 0 1 0]	[1 1 1 0 1 0]
	3 3 3 1 0 2	1 1 1 1 0 1
	2 2 2 0 2 0	1 1 1 0 1 0

$$\tau = 8, r' = 4/5$$

$$\mathbf{R}: [3, 5, 6, 1, 2, 1]$$

$$\mathbf{B}: [5, 1, 2, 6, 3, 4]$$

Ranges

Action of R on ranges, [[2], [2]]

Action of B on ranges, [[2], [1]]

Cycles: R, {{1, 3, 6}, {2, 5}}, B, {{4, 6}, {1, 2, 3, 5}}

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

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

Partitions

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

$$b_1 = \{2\}, b_2 = \{1\}, b_3 = \{3\}, b_4 = \{4, 6\}, b_5 = \{5\}$$

Action of R and B on the blocks of the partitions: = [5, 4, 2, 3, 1] [3, 1, 5, 4, 2]

with invariant measure [1, 1, 1, 1, 1]

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

See level-5 partition graph.

Right Group	
Coloring	{}
Rank	5
R,B	[3, 5, 6, 1, 2, 1], [5, 1, 2, 6, 3, 4]
Π_2	[3, 3, 1, 3, 2, 3, 1, 3, 2, 1, 3, 2, 1, 0, 2]
u_2	[1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1] (dim 1)

wpp	[1, 1, 1, 2, 1, 2]
π_5	[1, 0, 2, 0, 0, 0]
u_5	[1, 0, 1, 0, 0, 0]

2 . Coloring, {2}

R: [3, 1, 6, 1, 2, 1]

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

[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	4 vs 4	4 vs 5

Omega Rank for R : cycles: {{1, 3, 6}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{2, 3, 5}, {4, 6}} order: 6

[See Matrix](#)

$$[0, y_2, y_3, y_1, -y_2 - y_3 + 4y_1 + 4y_4, y_4]$$

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

3 . Coloring, {3}

R: [3, 5, 2, 1, 2, 1]

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

[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	4 vs 4	5 vs 5

Omega Rank for R : cycles: {{2, 5}} order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: {{4, 6}} order: 4

[See Matrix](#)

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

4 . Coloring, {4}

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

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

[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	3 vs 5	5 vs 5

Omega Rank for R : cycles: {{1, 3, 6}, {2, 5}} order: 6

[See Matrix](#)

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

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

Omega Rank for B : cycles: {{1, 2, 3, 5}} order: 4

[See Matrix](#)

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

5 . Coloring, {5}

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

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

[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	4 vs 4	4 vs 5
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Omega Rank for R : cycles: {{1, 3, 6}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 2, 5}, {4, 6}} order: 6

[See Matrix](#)

$$[y_2, -y_2 + 4y_1 - y_4 + 4y_3, 0, y_1, y_4, y_3]$$

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

6 . Coloring, {6}

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

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

[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 6	5 vs 5

Omega Rank for R : cycles: {{1, 3, 4, 6}, {2, 5}} order: 4

[See Matrix](#)

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

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

Omega Rank for B : cycles: {{1, 2, 3, 5}} order: 4

[See Matrix](#)

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

7 . Coloring, {2, 3}

R: [3, 1, 2, 1, 2, 1]

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

[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	3 vs 3	4 vs 4

Omega Rank for R : cycles: $\{\{1, 2, 3\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{4, 6\}\}$ order: 4

[See Matrix](#)

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

8 . Coloring, $\{2, 4\}$

R: [3, 1, 6, 6, 2, 1]

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

[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	5 vs 5

Omega Rank for R : cycles: $\{\{1, 3, 6\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{2, 3, 5\}\}$ order: 3

[See Matrix](#)

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

9 . Coloring, $\{2, 5\}$

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

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

[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	3 vs 3	2 vs 4

Omega Rank for R : cycles: $\{\{1, 3, 6\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{4, 6\}, \{2, 5\}\}$ order: 2

[See Matrix](#)

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

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

10 . Coloring, $\{2, 6\}$

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

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

[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	5 vs 5

Omega Rank for R : cycles: $\{\{1, 3, 4, 6\}\}$ order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{2, 3, 5\}\}$ order: 3

[See Matrix](#)

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

11 . Coloring, $\{3, 4\}$

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

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

[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	5 vs 5

Omega Rank for R : cycles: $\{\{2, 5\}\}$ order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{1, 3, 4, 5, 6\}\}$ order: 5

[See Matrix](#)

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

12 . Coloring, {3, 5}

R: [3, 5, 2, 1, 3, 1]

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

[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 5

Omega Rank for R : cycles: $\{\{2, 3, 5\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{4, 6\}, \{1, 2, 5\}\}$ order: 6

[See Matrix](#)

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

$$p = -s + s^5 \quad p' = -s + s^3 \quad p = -s + s^3$$

13 . Coloring, {3, 6}

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

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

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

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 3, 5, 6}} order: 4

[See Matrix](#)

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

14 . Coloring, {4, 5}

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

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

[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 : cycles: {{1, 3, 6}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 2, 5}} order: 3

[See Matrix](#)

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

15 . Coloring, {4, 6}

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

B: [5, 1, 2, 1, 3, 1]

[See graph](#)

[See pair graph](#)

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

Omega Rank for R : cycles: {{2, 5}, {4, 6}} order: 2

[See Matrix](#)

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

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

Omega Rank for B : cycles: {{1, 2, 3, 5}} order: 4

[See Matrix](#)

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

16 . Coloring, {5, 6}

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

B: [5, 1, 2, 6, 2, 1]

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

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 2, 5}} order: 3

[See Matrix](#)

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

17 . Coloring, {2, 3, 4}

R: [3, 1, 2, 6, 2, 1]

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

[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	4 vs 4	5 vs 5

Omega Rank for R : cycles: {{1, 2, 3}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 3, 4, 5, 6}} order: 5

[See Matrix](#)

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

18 . Coloring, {2, 3, 5}

R: [3, 1, 2, 1, 3, 1]

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

[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	3 vs 3	2 vs 4

Omega Rank for R : cycles: {{1, 2, 3}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{2, 5}, {4, 6}} order: 2

[See Matrix](#)

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

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

19 . Coloring, {2, 3, 6}

R: [3, 1, 2, 1, 2, 4]**B:** [5, 5, 6, 6, 3, 1][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 : cycles: {{1, 2, 3}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 3, 5, 6}} order: 4

[See Matrix](#)

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

20 . Coloring, {2, 4, 5}

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

Omega Rank for R : cycles: {{1, 3, 6}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{2, 5}} order: 4

[See Matrix](#)

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

21 . Coloring, {2, 4, 6}

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

B: [5, 5, 2, 1, 3, 1]

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

[See Matrix](#)

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

Omega Rank for B : cycles: {{2, 3, 5}} order: 3

[See Matrix](#)

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

22 . Coloring, {2, 5, 6}

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

B: [5, 5, 2, 6, 2, 1]

[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	4 vs 4	4 vs 4

Omega Rank for R : cycles: {{1, 3, 4, 6}} order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: {{2, 5}} order: 4

[See Matrix](#)

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

23 . Coloring, {3, 4, 5}

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

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

[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	5 vs 5

Omega Rank for R : cycles: {{2, 3, 5}} order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 2, 5}} order: 3

[See Matrix](#)

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

24 . Coloring, {3, 4, 6}

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

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

[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	3 vs 5	4 vs 4

Omega Rank for R : cycles: {{2, 5}, {4, 6}} order: 2

[See Matrix](#)

$$[0, 2y_3 + 2y_2, 2y_3 - y_1 + 2y_2, y_3, y_1, y_2]$$

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

Omega Rank for B : cycles: {{1, 3, 5, 6}} order: 4

[See Matrix](#)

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

25 . Coloring, {3, 5, 6}

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

B: [5, 1, 6, 6, 2, 1]

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

[See Matrix](#)

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

Omega Rank for B : cycles: {{1, 2, 5}} order: 3

[See Matrix](#)

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

26 . Coloring, {4, 5, 6}

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

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

[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	4 vs 4	3 vs 3
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Omega Rank for R : cycles: $\{\{4, 6\}\}$ order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{1, 2, 5\}\}$ order: 3

[See Matrix](#)

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

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

R: [3, 1, 2, 6, 3, 1]

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

[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	5 vs 5

Omega Rank for R : cycles: $\{\{1, 2, 3\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{2, 5\}\}$ order: 4

[See Matrix](#)

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

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

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

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

[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 5	4 vs 4

Omega Rank for R : cycles: $\{\{4, 6\}, \{1, 2, 3\}\}$ order: 6

[See Matrix](#)

$$[-y_3 - y_4 + 4y_2 + 4y_1, y_3, y_4, y_2, 0, y_1]$$

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

Omega Rank for B : cycles: $\{\{1, 3, 5, 6\}\}$ order: 4

[See Matrix](#)

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

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

R: [3, 1, 2, 1, 3, 4]

B: [5, 5, 6, 6, 2, 1]

[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 : cycles: $\{\{1, 2, 3\}\}$ order: 3

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{2, 5\}\}$ order: 4

[See Matrix](#)

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

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

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

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

[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	3 vs 3

Omega Rank for R : cycles: $\{\{4, 6\}\}$ order: 4

[See Matrix](#)

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

Omega Rank for B : cycles: $\{\{2, 5\}\}$ order: 2

[See Matrix](#)

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

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

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

B: [5, 1, 6, 1, 2, 1]

[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 5	4 vs 4

Omega Rank for R : cycles: $\{\{2, 3, 5\}, \{4, 6\}\}$ order: 6

[See Matrix](#)

$$[0, -y_1 + 4y_2 - y_3 + 4y_4, y_1, y_2, y_3, y_4]$$

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

Omega Rank for B : cycles: $\{\{1, 2, 5\}\}$ order: 3

[See Matrix](#)

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

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

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

B: [5, 5, 6, 1, 2, 1]

[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 5	4 vs 4

Omega Rank for R : cycles: {{4, 6}, {1, 2, 3}} order: 6

[See Matrix](#)

$$[-y_1 - y_2 + 4y_3 + 4y_4, y_1, y_2, y_3, 0, y_4]$$

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

Omega Rank for B : cycles: {{2, 5}} order: 4

[See Matrix](#)

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

SUMMARY	
Graph Type	NOT CC
$\nu(A)$	0
$\nu(\Delta)$	1
π	[3, 3, 3, 1, 3, 2]
Dbly Stoch	false

SANDWICH		Total 0
No .	Coloring	Rank

RT GROUPS		Total 1	
No .	Coloring	Rank	Solv
1	{}	5	Not Solvable

Δ -RANK'D	SC'D !RK'D	τ -RANK'D	R/B RANK'D	NOT SYNC'D	Total Runs	2^{n-1}
31	0	31 , 30	24 , 26	1	32	32
