New Rhythmic and Metric Possibilities, Ordered PC Relations, and Twelve-Tone Techniques

WEBSITE 32.1 *PC Set Comparison*

Given is a twelve-tone matrix, each pitch represented by an integer. Convert each integer to a pc name (*e.g.* 8 becomes A♭.

	I_0	I_2	I_1	I_5	I_4	I_{11}	I_6	I_7	I_9	I_8	I_{10}	I_3	
P_0	C	D	C#	F	E	B	F#	G	A	G#	A#	D#	R_0
P_{10}	A#	C	B	D#	D	A	E	F	G	F#	G#	C#	R_{10}
P_{11}	B	C#	C	E	D#	A#	F	F#	G#	G	A	D	R_{11}
P_7	G	A	G#	C	B	F#	C#	D	E	D#	F	A#	R_7
P_8	G#	A#	A	C#	C	G	D	D#	F	E	F#	B	R_8
P_1	C#	D#	D	F#	F	C	G	G#	A#	A	B	E	R_1
P_6	F#	G#	G	B	A#	F	C	C#	D#	D	E	A	R_6
P_5	F	G	F#	A#	A	E	B	C	D	C#	D#	G#	R_5
P_3	D#	F	E	G#	G	D	A	A#	C	B	C#	F#	R_3
P_4	E	F#	F	A	G#	D#	A#	B	C#	C	D	G	R_4
P_2	D	E	D#	G	F#	C#	G#	A	B	A#	C	F	R_2
P_9	A	B	A#	D	C#	G#	D#	E	F#	F	G	C	R_9
	RI_0	RI_2	RI_1	RI_5	RI_4	RI_{11}	RI_6	RI_7	RI_9	RI_8	RI_{10}	RI_3	

WEBSITE 32.2   *PC Set Comparison*

Given is a twelve-tone matrix, each pitch represented by a pc. Convert each integer to a
number (*e.g.* A♭ becomes 8).

	I₉	I₅	I₈	I₇	Ie	It	I₁	I₀	I₄	I₃	I₆	I₂	
P₉	9	5	8	7	e	t	1	0	4	3	6	2	R₉
P₁	1	9	0	e	3	2	5	4	8	7	t	6	R₁
Pt	t	6	9	8	0	e	2	1	5	4	7	3	Rt
Pe	e	7	t	9	1	0	3	2	6	5	8	4	Re
P₇	7	3	6	5	9	8	e	t	2	1	4	0	R₇
P₈	8	4	7	6	t	9	0	e	3	2	5	1	R₈
P₅	5	1	4	3	7	6	9	8	0	e	2	t	R₅
P₆	6	2	5	4	8	7	t	9	1	0	3	e	R₆
P₂	2	t	1	0	4	3	6	5	9	8	e	7	R₂
P₃	3	e	2	1	5	4	7	6	t	9	0	8	R₃
P₀	0	8	e	t	2	1	4	3	7	6	9	5	R₀
P₄	4	0	3	2	6	5	8	7	e	t	1	9	R₄
	RI₉	RI₅	RI₈	RI₇	RI₁₁	RIt	RI₁	RI₀	RI₄	RI₃	RI₆	RI₂	

WEBSITE 32.3   *PC Set Completion*

Complete the matrix below.

	I₀	I₁	I₆	I₂	I₇	I₉	I₃	I₄	It	Ie	I₅	I₈	
P₀	0	1	6	2	7	9	3	4	t	e	5	8	R₀
Pe	e	0	5	1	6	8	2	3	9	t	4	7	Re
P₆	6	7	0	8	1	3	9	t	4	5	e	2	R₆
Pt	t	e	4	0	5	7	1	2	8	9	3	6	Rt
P₅	5	6	e	7	0	2	8	9	3	4	t	1	R₅
P₃	3	4	9	5	t	0	6	7	1	2	8	e	R₃
P₉	9	t	3	e	4	6	0	1	7	8	2	5	R₉
P₈	8	9	2	t	3	5	e	0	6	7	1	4	R₈
P₂	2	3	8	4	9	e	5	6	0	1	7	t	R₂
P₁	1	2	7	3	8	t	4	5	e	0	6	9	R₁
P₇	7	8	1	9	2	4	t	e	5	6	0	3	R₇
P₄	4	5	t	6	e	1	7	8	2	3	9	0	R₄
	RI₀	RI₁	RI₆	RI₂	RI₇	RI₉	RI₃	RI₄	RIt	RIe	RI₅	RI₈	

WEBSITE 32.4   *PC Set Completion*

Create a 12x12 matrix for each of the following rows using pitch names.

	I₀	I₂	I₁	I₅	I₄	I₁₁	I₆	I₇	I₉	I₈	I₁₀	I₃	
P₀	C	D	C#	F	E	B	F#	G	A	G#	A#	D#	R₀
P₁₀	A#	C	B	D#	D	A	E	F	G	F#	G#	C#	R₁₀
P₁₁	B	C#	C	E	D#	A#	F	F#	G#	G	A	D	R₁₁
P₇	G	A	G#	C	B	F#	C#	D	E	D#	F	A#	R₇
P₈	G#	A#	A	C#	C	G	D	D#	F	E	F#	B	R₈
P₁	C#	D#	D	F#	F	C	G	G#	A#	A	B	E	R₁
P₆	F#	G#	G	B	A#	F	C	C#	D#	D	E	A	R₆
P₅	F	G	F#	A#	A	E	B	C	D	C#	D#	G#	R₅
P₃	D#	F	E	G#	G	D	A	A#	C	B	C#	F#	R₃
P₄	E	F#	F	A	G#	D#	A#	B	C#	C	D	G	R₄
P₂	D	E	D#	G	F#	C#	G#	A	B	A#	C	F	R₂
P₉	A	B	A#	D	C#	G#	D#	E	F#	F	G	C	R₉
	RI₀	RI₂	RI₁	RI₅	RI₄	RI₁₁	RI₆	RI₇	RI₉	RI₈	RI₁₁	RI₃	

B. ARNOLD SCHOENBERG: *A SURVIVOR FROM WARSAW*

	I₆	I₇	I₀	I₈	I₄	I₃	I₁₁	I₁₀	I₅	I₉	I₁	I₂	
P₆	F#	g	C	G#	e	d#	b	A#	f	a	C#	d	R₆
P₅	f	F#	b	g	d#	d	A#	a	e	G#	C	C#	R₅
P₀	C	C#	F#	d	A#	a	f	e	b	d#	g	G#	R₀
P₄	e	f	A#	F#	d	C#	a	G#	d#	g	b	C	R₄
P₈	G#	a	d	A#	F#	f	C#	C	g	b	d#	e	R₈
P₉	a	A#	d#	b	g	F#	d	C#	G#	C	e	f	R₉
P₁	C#	d	g	d#	b	A#	F#	f	C	e	G#	a	R₁
P₂	d	d#	G#	e	C	b	g	F#	C#	f	a	A#	R₂
P₇	g	G#	C#	a	f	e	C	b	F#	A#	d	d#	R₇
P₃	d#	e	a	f	C#	C	G#	g	d	F#	A#	b	R₃
P₁₁	b	C	f	C#	a	G#	e	d#	A#	d	F#	g	R₁₁
P₁₀	A#	b	e	C	G#	g	d#	d	a	C#	f	F#	R₁₀
	RI₆	RI₇	RI₀	RI₈	RI₄	RI₃	RI₁₁	RI₁₀	RI₅	RI₉	RI₁	RI₂	

C. ANTON WEBERN: *CONCERT FOR NINE INSTRUMENTS*, OP. 24

	I_{11}	I_{11}	I_2	I_4	I_7	I_5	I_8	I_4	I_5	I_0	I_1	I_9	
P_{11}	B	B	D	EB	G	F3	g#	EB	F3	C	C#	A	R_{11}
P_{11}	B	B	D	EB	G	F3	g#	EB	F3	C	C#	A	R_{11}
P_8	g#	g#	B	C#	EB	D	F3	C#	D	A	A#	F#	R_8
P_6	F#	F#	A	B	D	C	D#	B	C	G	g#	EB	R_6
P_3	D#	D#	F#	g#	B	A	C	g#	A	EB	F3	C#	R_3
P_5	F3	F3	g#	A#	C#	B	D	A#	B	F#	G	D#	R_5
P_2	D	D	F3	G	A#	g#	B	G	g#	D#	EB	C	R_2
P_6	F#	F#	A	B	D	C	D#	B	C	G	g#	EB	R_6
P_5	F3	F3	g#	A#	C#	B	D	A#	B	F#	G	D#	R_5
P_{10}	A#	A#	C#	D#	F#	EB	G	D#	EB	B	C	g#	R_{10}
P_9	A	A	C	D	F3	D#	F#	D	D#	A#	B	G	R_9
P_1	C#	C#	EB	F#	A	G	A#	F#	G	D	D#	B	R_1
	RI_{11}	RI_{11}	RI_2	RI_4	RI_7	RI_5	RI_8	RI_4	RI_5	RI_0	RI_1	RI_9	