

Set Class List by Reginald Bain

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TRICHORDS

FN(DF)	PRIME FORM	IC VECTOR
3-1(12)	(0 1 2)	2 1 0 0 0 0
3-2	(0 1 3)	1 1 1 0 0 0
3-3	(0 1 4)	1 0 1 1 0 0
3-4	(0 1 5)	1 0 0 1 1 0
3-5	(0 1 6)	1 0 0 0 1 1
3-6(12)	(0 2 4)	0 2 0 1 0 0
3-7	(0 2 5)	0 1 1 0 1 0
3-8	(0 2 6)	0 1 0 1 0 1
3-9(12)	(0 2 7)	0 1 0 0 2 0
3-10(12)	(0 3 6)	0 0 2 0 0 1
3-11	(0 3 7)	0 0 1 1 1 0
3-12(4)	(0 4 8)	0 0 0 3 0 0

NONACHORDS

FN(DF)	PRIME FORM	IC VECTOR
9-1(12)	(0 1 2 3 4 5 6 7 8)	8 7 6 6 6 3
9-2	(0 1 2 3 4 5 6 7 9)	7 7 7 6 6 3
9-3	(0 1 2 3 4 5 6 8 9)	7 6 7 7 6 3
9-4	(0 1 2 3 4 5 7 8 9)	7 6 6 7 7 3
9-5	(0 1 2 3 4 6 7 8 9)	7 6 6 6 7 4
9-6(12)	(0 1 2 3 4 5 6 8 10)	6 8 6 7 6 3
9-7	(0 1 2 3 4 5 7 8 10)	6 7 7 6 7 3
9-8	(0 1 2 3 4 6 7 8 10)	6 7 6 7 6 4
9-9(12)	(0 1 2 3 5 6 7 8 10)	6 7 6 6 8 3
9-10(12)	(0 1 2 3 4 6 7 9 10)	6 6 8 6 6 4
9-11	(0 1 2 3 5 6 7 9 10)	6 6 7 7 7 3
9-12(4)	(0 1 2 4 5 6 8 9 10)	6 6 6 9 6 3

TETRACHORDS

FN(DF)	PRIME FORM	IC VECTOR
4-1(12)	(0 1 2 3)	3 2 1 0 0 0
4-2	(0 1 2 4)	2 2 1 1 0 0
4-3(12)	(0 1 3 4)	2 1 2 1 0 0
4-4	(0 1 2 5)	2 1 1 1 1 0
4-5	(0 1 2 6)	2 1 0 1 1 1
4-6(12)	(0 1 2 7)	2 1 0 0 2 1
4-7(12)	(0 1 4 5)	2 0 1 2 1 0
4-8(12)	(0 1 5 6)	2 0 0 1 2 1
4-9(6)	(0 1 6 7)	2 0 0 0 2 2
4-10(12)	(0 2 3 5)	1 2 2 0 1 0
4-11	(0 1 3 5)	1 2 1 1 1 0
4-12	(0 2 3 6)	1 1 2 1 0 1
4-13	(0 1 3 6)	1 1 2 0 1 1
4-14	(0 2 3 7)	1 1 1 1 2 0
4-Z15	(0 1 4 6)	1 1 1 1 1 1
4-16	(0 1 5 7)	1 1 0 1 2 1
4-17(12)	(0 3 4 7)	1 0 2 2 1 0
4-18	(0 1 4 7)	1 0 2 1 1 1
4-19	(0 1 4 8)	1 0 1 3 1 0
4-20(12)	(0 1 5 8)	1 0 1 2 2 0
4-21(12)	(0 2 4 6)	0 3 0 2 0 1
4-22	(0 2 4 7)	0 2 1 1 2 0
4-23(12)	(0 2 5 7)	0 2 1 0 3 0
4-24(12)	(0 2 4 8)	0 2 0 3 0 1
4-25(6)	(0 2 6 8)	0 2 0 2 0 2
4-26(12)	(0 3 5 8)	0 1 2 1 2 0
4-27	(0 2 5 8)	0 1 2 1 1 1
4-28(3)	(0 3 6 9)	0 0 4 0 0 2
4-Z29	(0 1 3 7)	1 1 1 1 1 1

OCTACHORDS

FN(DF)	PRIME FORM	IC VECTOR
8-1(12)	(0 1 2 3 4 5 6 7)	7 6 5 4 4 2
8-2	(0 1 2 3 4 5 6 8)	6 6 5 5 4 2
8-3(12)	(0 1 2 3 4 5 6 9)	6 5 6 5 4 2
8-4	(0 1 2 3 4 5 7 8)	6 5 5 5 5 2
8-5	(0 1 2 3 4 6 7 8)	6 5 4 5 5 3
8-6(12)	(0 1 2 3 5 6 7 8)	6 5 4 4 6 3
8-7(12)	(0 1 2 3 4 5 8 9)	6 4 5 6 5 2
8-8(12)	(0 1 2 3 4 7 8 9)	6 4 4 5 6 3
8-9(6)	(0 1 2 3 6 7 8 9)	6 4 4 4 6 4
8-10(12)	(0 2 3 4 5 6 7 9)	5 6 6 4 5 2
8-11	(0 1 2 3 4 5 7 9)	5 6 5 5 5 2
8-12	(0 1 3 4 5 6 7 9)	5 5 6 5 4 3
8-13	(0 1 2 3 4 6 7 9)	5 5 6 4 5 3
8-14	(0 1 2 4 5 6 7 9)	5 5 5 5 6 2
8-Z15	(0 1 2 3 4 6 8 9)	5 5 5 5 5 3
8-16	(0 1 2 3 5 7 8 9)	5 5 4 5 6 3
8-17(12)	(0 1 3 4 5 6 8 9)	5 4 6 6 5 2
8-18	(0 1 2 3 5 6 8 9)	5 4 6 5 5 3
8-19	(0 1 2 4 5 6 8 9)	5 4 5 7 5 2
8-20(12)	(0 1 2 4 5 7 8 9)	5 4 5 6 6 2
8-21(12)	(0 1 2 3 4 6 8 10)	4 7 4 6 4 3
8-22	(0 1 2 3 5 6 8 10)	4 6 5 5 6 2
8-23(12)	(0 1 2 3 5 7 8 10)	4 6 5 4 7 2
8-24(12)	(0 1 2 4 5 6 8 10)	4 6 4 7 4 3
8-25(6)	(0 1 2 4 6 7 8 10)	4 6 4 6 4 4
8-26(12)	(0 1 2 4 5 7 9 10)	4 5 6 5 6 2
	RAHN (0 1 3 4 5 7 8 10)	
8-27	(0 1 2 4 5 7 8 10)	4 5 6 5 5 3
8-28(3)	(0 1 3 4 6 7 9 10)	4 4 8 4 4 4
8-Z29	(0 1 2 3 5 6 7 9)	5 5 5 5 5 3

Set Class List
by Reginald Bain

PENTACHORDS

FN(DF)	PRIME FORM	IC VECTOR
5-1(12)	(0 1 2 3 4)	4 3 2 1 0 0
5-2	(0 1 2 3 5)	3 3 2 1 1 0
5-3	(0 1 2 4 5)	3 2 2 2 1 0
5-4	(0 1 2 3 6)	3 2 2 1 1 1
5-5	(0 1 2 3 7)	3 2 1 1 2 1
5-6	(0 1 2 5 6)	3 1 1 2 2 1
5-7	(0 1 2 6 7)	3 1 0 1 3 2
5-8(12)	(0 2 3 4 6)	2 3 2 2 0 1
5-9	(0 1 2 4 6)	2 3 1 2 1 1
5-10	(0 1 3 4 6)	2 2 3 1 1 1
5-11	(0 2 3 4 7)	2 2 2 2 2 0
5-Z12(12)	(0 1 3 5 6)	2 2 2 1 2 1
5-13	(0 1 2 4 8)	2 2 1 3 1 1
5-14	(0 1 2 5 7)	2 2 1 1 3 1
5-15(12)	(0 1 2 6 8)	2 2 0 2 2 2
5-16	(0 1 3 4 7)	2 1 3 2 1 1
5-Z17(12)	(0 1 3 4 8)	2 1 2 3 2 0
5-Z18	(0 1 4 5 7)	2 1 2 2 2 1
5-19	(0 1 3 6 7)	2 1 2 1 2 2
5-20	(0 1 3 7 8)	2 1 1 2 3 1

RAHN (0 1 5 6 8)

5-21	(0 1 4 5 8)	2 0 2 4 2 0
5-22(12)	(0 1 4 7 8)	2 0 2 3 2 1
5-23	(0 2 3 5 7)	1 3 2 1 3 0
5-24	(0 1 3 5 7)	1 3 1 2 2 1
5-25	(0 2 3 5 8)	1 2 3 1 2 1
5-26	(0 2 4 5 8)	1 2 2 3 1 1
5-27	(0 1 3 5 8)	1 2 2 2 3 0
5-28	(0 2 3 6 8)	1 2 2 2 1 2
5-29	(0 1 3 6 8)	1 2 2 1 3 1
5-30	(0 1 4 6 8)	1 2 1 3 2 1
5-31	(0 1 3 6 9)	1 1 4 1 1 2
5-32	(0 1 4 6 9)	1 1 3 2 2 1
5-33(12)	(0 2 4 6 8)	0 4 0 4 0 2
5-34(12)	(0 2 4 6 9)	0 3 2 2 2 1
5-35(12)	(0 2 4 7 9)	0 3 2 1 4 0
5-Z36	(0 1 2 4 7)	2 2 2 1 2 1
5-Z37(12)	(0 3 4 5 8)	2 1 2 3 2 0
5-Z38	(0 1 2 5 8)	2 1 2 2 2 1

SEPTACHORDS

FN(DF)	PRIME FORM	IC VECTOR
7-1(12)	(0 1 2 3 4 5 6)	6 5 4 3 2 1
7-2	(0 1 2 3 4 5 7)	5 5 4 3 3 1
7-3	(0 1 2 3 4 5 8)	5 4 4 4 3 1
7-4	(0 1 2 3 4 6 7)	5 4 4 3 3 2
7-5	(0 1 2 3 5 6 7)	5 4 3 3 4 2
7-6	(0 1 2 3 4 7 8)	5 3 3 4 4 2
7-7	(0 1 2 3 6 7 8)	5 3 2 3 5 3
7-8(12)	(0 2 3 4 5 6 8)	4 5 4 4 2 2
7-9	(0 1 2 3 4 6 8)	4 5 3 4 3 2
7-10	(0 1 2 3 4 6 9)	4 4 5 3 3 2
7-11	(0 1 3 4 5 6 8)	4 4 4 4 4 1
7-Z12(12)	(0 1 2 3 4 7 9)	4 4 4 3 4 2
7-13	(0 1 2 4 5 6 8)	4 4 3 5 3 2
7-14	(0 1 2 3 5 7 8)	4 4 3 3 5 2
7-15(12)	(0 1 2 4 6 7 8)	4 4 2 4 4 3
7-16	(0 1 2 3 5 6 9)	4 3 5 4 3 2
7-Z17(12)	(0 1 2 4 5 6 9)	4 3 4 5 4 1
7-Z18	(0 1 2 3 5 8 9)	4 3 4 4 4 2
7-19	(0 1 2 3 6 7 9)	4 3 4 3 4 3
7-20	(0 1 2 4 7 8 9)	4 3 3 4 5 2

RAHN (0 1 2 5 6 7 9)

7-21	(0 1 2 4 5 8 9)	4 2 4 6 4 1
7-22(12)	(0 1 2 5 6 8 9)	4 2 4 5 4 2
7-23	(0 2 3 4 5 7 9)	3 5 4 3 5 1
7-24	(0 1 2 3 5 7 9)	3 5 3 4 4 2
7-25	(0 2 3 4 6 7 9)	3 4 5 3 4 2
7-26	(0 1 3 4 5 7 9)	3 4 4 5 3 2
7-27	(0 1 2 4 5 7 9)	3 4 4 4 5 1
7-28	(0 1 3 5 6 7 9)	3 4 4 4 3 3
7-29	(0 1 2 4 6 7 9)	3 4 4 3 5 2
7-30	(0 1 2 4 6 8 9)	3 4 3 5 4 2
7-31	(0 1 3 4 6 7 9)	3 3 6 3 3 3
7-32	(0 1 3 4 6 8 9)	3 3 5 4 4 2
7-33(12)	(0 1 2 4 6 8 10)	2 6 2 6 2 3
7-34(12)	(0 1 3 4 6 8 10)	2 5 4 4 4 2
7-35(12)	(0 1 3 5 6 8 10)	2 5 4 3 6 1
7-Z36	(0 1 2 3 5 6 8)	4 4 4 3 4 2
7-Z37(12)	(0 1 3 4 5 7 8)	4 3 4 5 4 1
7-Z38	(0 1 2 4 5 7 8)	4 3 4 4 4 2

HEXACHORDS

FN(DF)	PRIME FORM	IC VECTOR	FN(DF)	PRIME FORM	IC VECTOR
6-1(12)	(0 1 2 3 4 5)	5 4 3 2 1 0			
6-2	(0 1 2 3 4 6)	4 4 3 2 1 1			
6-Z3	(0 1 2 3 5 6)	4 3 3 2 2 1	6-Z36	(0 1 2 3 4 7)	4 3 3 2 2 1
6-Z4(12)	(0 1 2 4 5 6)	4 3 2 3 2 1	6-Z37(12)	(0 1 2 3 4 8)	4 3 2 3 2 1
6-5	(0 1 2 3 6 7)	4 2 2 2 3 2			
6-Z6(12)	(0 1 2 5 6 7)	4 2 1 2 4 2	6-Z38(12)	(0 1 2 3 7 8)	4 2 1 2 4 2
6-7(6)	(0 1 2 6 7 8)	4 2 0 2 4 3			
6-8(12)	(0 2 3 4 5 7)	3 4 3 2 3 0			
6-9	(0 1 2 3 5 7)	3 4 2 2 3 1			
6-Z10	(0 1 3 4 5 7)	3 3 3 3 2 1	6-Z39	(0 2 3 4 5 8)	3 3 3 3 2 1

Set Class List
by Reginald Bain

6-Z11	(0 1 2 4 5 7)	3 3 3 2 3 1	6-Z40	(0 1 2 3 5 8)	3 3 3 2 3 1
6-Z12	(0 1 2 4 6 7)	3 3 2 2 3 2	6-Z41	(0 1 2 3 6 8)	3 3 2 2 3 2
6-Z13(12)	(0 1 3 4 6 7)	3 2 4 2 2 2	6-Z42(12)	(0 1 2 3 6 9)	3 2 4 2 2 2
6-14	(0 1 3 4 5 8)	3 2 3 4 3 0			
6-15	(0 1 2 4 5 8)	3 2 3 4 2 1			
6-16	(0 1 4 5 6 8)	3 2 2 4 3 1			
6-Z17	(0 1 2 4 7 8)	3 2 2 3 3 2	6-Z43	(0 1 2 5 6 8)	3 2 2 3 3 2
6-18	(0 1 2 5 7 8)	3 2 2 2 4 2			
6-Z19	(0 1 3 4 7 8)	3 1 3 4 3 1	6-Z44	(0 1 2 5 6 9)	3 1 3 4 3 1
6-20(4)	(0 1 4 5 8 9)	3 0 3 6 3 0			
6-21	(0 2 3 4 6 8)	2 4 2 4 1 2			
6-22	(0 1 2 4 6 8)	2 4 1 4 2 2			
6-Z23(12)	(0 2 3 5 6 8)	2 3 4 2 2 2	6-Z45(12)	(0 2 3 4 6 9)	2 3 4 2 2 2
6-Z24	(0 1 3 4 6 8)	2 3 3 3 3 1	6-Z46	(0 1 2 4 6 9)	2 3 3 3 3 1
6-Z25	(0 1 3 5 6 8)	2 3 3 2 4 1	6-Z47	(0 1 2 4 7 9)	2 3 3 2 4 1
6-Z26(12)	(0 1 3 5 7 8)	2 3 2 3 4 1	6-Z48(12)	(0 1 2 5 7 9)	2 3 2 3 4 1
6-27	(0 1 3 4 6 9)	2 2 5 2 2 2			
6-Z28(12)	(0 1 3 5 6 9)	2 2 4 3 2 2	6-Z49(12)	(0 1 3 4 7 9)	2 2 4 3 2 2
6-Z29(12)	(0 1 3 6 8 9)	2 2 4 2 3 2	6-Z50(12)	(0 1 4 6 7 9)	2 2 4 2 3 2
RAHN (0 2 3 6 7 9)					
6-30(12)	(0 1 3 6 7 9)	2 2 4 2 2 3			
6-31	(0 1 3 5 8 9)	2 2 3 4 3 1			
RAHN (0 1 4 5 7 9)					
6-32(12)	(0 2 4 5 7 9)	1 4 3 2 5 0			
6-33	(0 2 3 5 7 9)	1 4 3 2 4 1			
6-34	(0 1 3 5 7 9)	1 4 2 4 2 2			
6-35(2)	(0 2 4 6 8 10)	0 6 0 6 0 3			

About this appendix

The following sample entry from the table above provides a label for each column:

Listing for the complementary set class					
FN(DF)	PRIME FORM	IC VECTOR	FN(DF)	PRIME FORM	IC VECTOR
3-1(12)	(0 1 2)	2 1 0 0 0 0	9-1(12)	(0 1 2 3 4 5 6 7 8)	8 7 6 6 6 3
Forte name	Prime form	Interval class vector			

The DF in parenthesis to the right of the Forte name stands for distinct forms. It indicates the number of distinct members in the set class. It is not used when referring to the set class. Most set classes have 24 distinct forms: 12 under transposition and 12 under inversion followed by transposition. When nothing appears in parenthesis to the right of the Forte name, the set class has 24 distinct forms. Some Forte names include a Z, for example, 4-Z29. The Z indicates that there is another set class of the same size (*cardinality*) that has the same interval class (ic) vector. Two set classes that have the same ic vector are said to be *Z-related*. Inclusion of the Z in the Forte name is optional. A brief example will serve to demonstrate the complement relation on which this table is organized. The pc set (C,C#,D) belongs to set class 3-1 (012). The *complement* of (C,C#,D) is (D#,E,F,F#,G,G#,A,A#,B), the other nine pitch classes. This pc set is a member of set class 9-1 (012345678). *Complementary set classes* are listed on the same line in the table. It should also be mentioned that some hexachordal set classes are *self-complementary*, so nothing appears in the fourth, fifth and sixth columns of these entries.

This table was generated using Bain's *AtonalAssistant*. It uses Forte's normal form algorithm. The use of Rahn's algorithm for determining normal form yields different prime forms for five set classes: 5-20, 6-Z29, 6-31, 7-20 and 8-26. These five different prime forms are also included in the table and are marked **RAHN**. Intervening spaces have been added to the prime forms and ic vectors to make them easier to read. These intervening spaces should not be used when writing prime forms and ic vectors. By assigning a one-character symbol to pitch-class integers 10 and 11, prime forms can be listed without intervening spaces. Some theorists substitute a T for 10 and E for 11. It is also common to find other substitutions such as: A for 10, B for 11; t for 10, e for 11; a for 10, b for 11, and so on.