

Musical Dice Game Minuets I

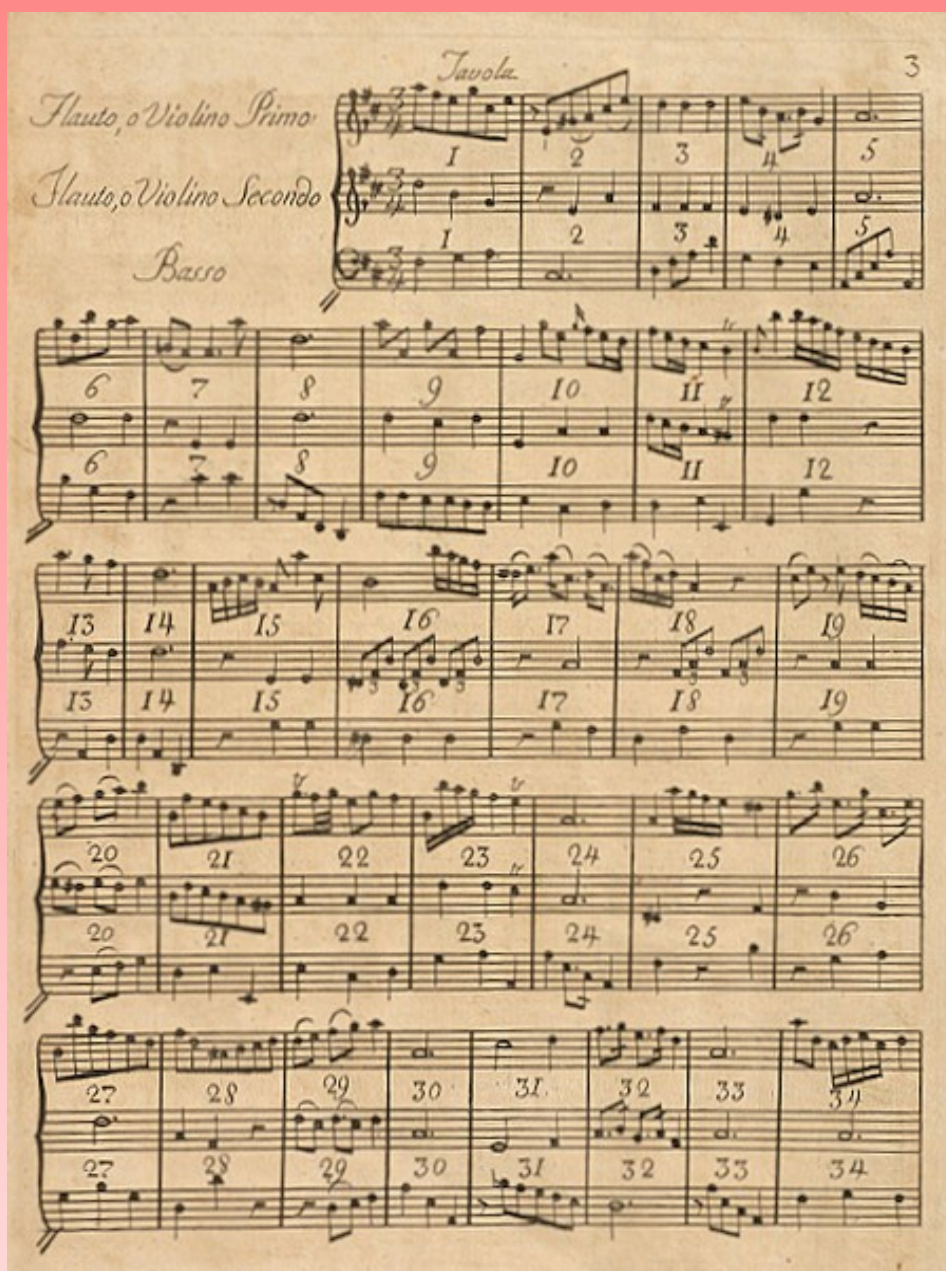
based on

***GIOCO FILARMONICO O SIA MANIERA FACILE PER
COMPORRE UN INFINITO NUMERO DI MINUETTI E
TRIO, ANCHE SENZA SAPERE IL CONTRAPUNTO***

(per due violini e basso, o per due flauti e basso)

attributed to Franz Joseph Haydn

compiled by I. T. Author



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1 Introduction¹

The cover page of a German version of the Musical Dice Game (MDG) attributed to Franz Joseph Haydn (1732-1809) opens with the words:

“Tabelle, aus welcher man unzählige Menuetten und Trio für das Klavier herauswürfeln kann verfaßt von P. Maximilian Stadler”	“Table, from which you can create (roll out) countless minuets and trios for the piano written by P. Maximilian Stadler”.
--	---

while a corresponding Italian version has the following words:

“GIOCO FILARMONICO O SIA MANIERA FACILE PER COMPORRE UN INFINITO NUMERO DI MINUETTI E TRIO, ANCHE SENZA SAPERE IL CONTRAPUNTO”	“PHILHARMONIC GAME OR BE IT AN EASY WAY TO COMPOSE AN INFINITE NUMBER OF MINUETS AND TRIOS, EVEN WITHOUT KNOWING COUNTERPOINT”
--	--

Indeed, this particular MDG allows a non-professional musician to generate (“compose”) as nearly as 35.7 octillions of unique minuet-trios (more precisely,

$$(11^{14}) \times (10^2) \times (6^{14} \times 4 \times 3) = 35,710,533,929,214,947,279,418,163,200;$$

see additional explanation in Subsection 2.2).

A *Musikalisches Würfelspiel* (German for “musical dice game” or MDG) is a system for randomly “generating” (e.g., by using a die or two dice) musical compositions from precomposed options and was quite popular throughout Western Europe in the 18th century. The earliest known MDG is Johann Philipp Kirnberger’s *Der allezeit fertige Menuetten und Polonaisencomponist* (1st ed. 1757; rev. 2nd ed. 1783) (translated from German as “The Ever-Ready Minuet and Polonaise Composer”). Other well-known composers that are known to have composed a MDG are C.P.E. Bach (*Einfall, einen doppelten Contrapunct in der Octave von sechs Tacten zu machen, ohne die Regeln davon zu wissen* (1758); translated from German as “A method for making six bars of double counterpoint at the octave without knowing the rules”) and *Musikalisches Würfelspiel K. 516f* (1787), the most famous of MDGs, that was first published by J.J. Hummel in 1793 in Berlin, and was republished in 1796 by Nikolaus Simrock in Bonn (as K. 294d or K. Anh. C 30.01). Simrock attributed this work, which is also known under the title of *Anleitung zum Componieren von Walzern so viele man will vermittelt zweier Würfel, ohne etwas von der Musik oder Composition zu verstehen* (German for “Instructions for the composition of as many waltzes as one desires with two dice, without understanding anything about music or composition”), to Wolfgang Amadeus Mozart and it may have been based on Mozart’s manuscript *K. 516f*, written in 1787, consisting of numerous two-bar fragments of music, that appear to be some kind of game or system for constructing music out of two-bar fragments, but contains no instructions nor hints as to the use of dice. An [online article](#) by Hideo Noguchi offers a possible explanation for this attribution.

The MDG featured in this book, *Table pour composer des minuets et des Trios à la infinie; avec deux dez à jouer* (translated from French as “A table for composing minuets and trios to infinity, by playing with two dice”) was first published in Germany by Abbé Maximilian Stadler in 1780. A highly similar edition was later published in Italy with the title given above by Luigi Marescalchi. From here onwards, we simply refer to this MDG as *Gioco Filarmonico*.

This book is a collection of 50 MDG minuets generated according to the rules given in an arrangement of *Gioco Filarmonico* for two violins (or two flutes) and a bass that were also published by L. Marescalchi in

¹The information contained in the introduction were culled from the following online resources: [Wikipedia: Musikalisches Würfelspiel](#), <https://opus-infinity.org/>, and [Mozart Studies Online](#).

Italy. The scores of the generated minuets, that were initially written using the `abc` environment of Chris Walshaw, were converted to Scalar Vector Graphics (SVG) images (with corresponding MIDI files) using `abcm2ps` and `abcmidi`, and were then pre-processed with Inkscape to be included in L^AT_EX to produce this book.

2 *Gioco Filarmonico*

2.1 Rules

The Rules provided in *Gioco Filarmonico* generate MDGs that are minuets, each consisting of a 16-bar minuet. The minuet is played eight (8) bars at a time, each 8-bar set being repeated each time, eventually yielding a total of 32 played measures (or bars).

The following Rules are followed for generating each minuet:

1. For each bar from the first to the 16th, two dice are tossed and the sum of the two faces that come up are obtained. Hence, 16 two-dice tosses (with possible outcomes from the set {2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}), one two-dice toss for each bar, are needed to generate a minuet.
2. Table 1 is then used to determine which bar number from the Table of Measures for Minuets (Figures 1 to 3) is to be used for obtaining the notes—based on the outcome of each two-dice toss—for the particular bar of the minuet-to-be-generated. The possible outcomes of a two-dice toss (2 to 12) are given (stub items) on the left-hand side of Table 1, while the bar numbers of the minuet-to-be-generated are given on the top of that table (captions or column headings).
3. For example, suppose for bar 1, the outcome of the two-dice toss is 5. If we now look for bar number 1 at the top of Table 1 and for the outcome 5 on the left-hand side of that table, we obtain 40 as the measure number of the Table of Measures for Minuets (see Figure 1) to be used for obtaining the notes to be played for the first bar of the minuet-to-be-generated. Similarly, an outcome of 11 for the two-dice toss for bar 9 of the minuet-to-be-generated leads us to obtain the notes from bar 102 of the Table of Measures for Minuets (see Figure 2).

2.2 Table for finding Measure Number from Table of Measures

		(a) Measure Number of Minuet															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
D i c e 1 + D i c e 2	2	96	22	141	41	105	122	11	30	70	121	26	9	112	49	109	14
	3	32	6	128	63	146	46	134	81	117	39	126	56	174	18	116	83
	4	69	95	158	13	153	55	110	24	66	139	15	132	73	58	145	79
	5	40	17	113	85	161	2	159	100	90	176	7	34	67	160	52	170
	6	148	74	163	45	80	97	36	107	25	143	64	125	76	136	1	93
	7	104	157	27	167	154	68	118	91	138	71	150	29	101	162	23	151
	8	152	60	171	53	99	133	21	127	16	155	57	175	43	168	89	172
	9	119	84	114	50	140	86	169	94	120	88	48	166	51	115	72	111
	10	98	142	42	156	75	129	62	123	65	77	19	82	137	38	149	8
	11	3	87	165	61	135	47	147	33	102	4	31	164	144	59	173	78
	12	54	130	10	103	28	37	106	5	35	20	108	92	12	124	44	131

Table 1: Measure number to be looked-up in the Table of Measures (see Figures 1, 2, 3, and 4 in Section 2.3) corresponding to each two-dice outcome per measure for the minuet. Measure number in **bold blue font** indicates identical measures under that column (see <https://opus-infinity.org> for more info).

The table given here (Table 1) combines the two (2) tables, given on page 2 of *Gioco Filarmonico* but the contents are exactly as given there. The leftmost column contains the possible two-dice outcomes while the topmost row contains the bar numbers (16 in all) for the MDG minuet-to-be-generated.

Although the body of Table 1 includes $11 \times 16 = 176$ measure numbers, the Table of Measures for Minuets (Figures 1 to 4) contains only 174 different measures. This is so since in Table 1, although 11 choices are listed below each column, two choices under bar 8 (choices 30 and 123) and also under bar 16 (choices 151 and 172)) lead to identical notes in the Table of Measures for Minuets, so that only 10 different bars are under each of these two (2) columns. Consequently, the total number of different measures for minuets is $11 \times 14 + 10 + 10 = 174$. These also explain why the total number of unique minuets that can be produced is about 3.8 quintillion), more precisely

$$11^{14} \times 10 \times 10 = 3,797,498,335,8324,100,$$

instead of 11^{16} , which is the total number of minuets up to two-dice outcomes.

An example of a generated minuet based on the just described rules is given below. The same minuet and 49 other examples are given in Section 5.

10-3-6-9-4-9-11-8-2-9-10-5-12-4-8-12
gfmit::98:06:163:50:153:86:147:127:70:88:19:34:12:58:89:172::
Perm. No.: 36341129383431585

$\text{♩} = 90$

For audio (midi): [gfmit-10-3-6-9-4-9-11-8-2-9-10-5-12-4-8-12.mid](#)

2.3 Table of Measures

Gioco Filarmonico (Minuets)

[from [http://imslp.org/wiki/Table_pour_composer_des_Minuets_et_des_Trios_%28C3%A0_la_infinie_\(Stadler,_Maximilian\)](http://imslp.org/wiki/Table_pour_composer_des_Minuets_et_des_Trios_%28C3%A0_la_infinie_(Stadler,_Maximilian))]

attributed to Joseph Haydn

$\text{♩} = 90$

The musical score is presented in five systems, each with three staves (treble, middle, and bass clef). The key signature is one sharp (F#). The tempo is marked as quarter note = 90. The score includes various musical notations such as eighth notes, sixteenth notes, triplets, and trills. Measure numbers 1 through 40 are indicated above the staff.

Figure 1: Table of Measures for Minuets (Part I)

41 42 43 44 tr 45 46 47 48

49 50 51 52 tr 53 54 55 56

57 58 tr tr 59 60 61 62 63 64

65 66 67 tr 68 69 70 71 72

73 74 75 76 77 78 79 80

81 82 83 84 85 86 87 88

Figure 2: Table of Measures for Minuets (Part II)

89 90 91 92 93 94 95 96

97 98 99 100 101 102 103 104

105 106 107 108 109 110 111 112

113 114 115 116 117 118 119 120

121 122 123 124 125 126 127 128

129 130 131 132 133 134 135 136

Figure 3: Table of Measures for Minuets (Part III)

The musical score consists of five systems, each with three staves. The key signature has two sharps (F# and C#). The measures are numbered 137 through 176. The notation includes various rhythmic values and ornaments:

- System 1 (Measures 137-144):** Features eighth and sixteenth notes, with triplets in measures 141, 142, 143, and 144. A trill (tr) is marked above measure 142.
- System 2 (Measures 145-152):** Continues with eighth and sixteenth notes, including a triplet in measure 147 and another in measure 152.
- System 3 (Measures 153-160):** Shows a mix of eighth and sixteenth notes, with triplets in measures 158 and 160.
- System 4 (Measures 161-168):** Includes eighth and sixteenth notes, a trill (tr) in measure 163, and a triplet in measure 161.
- System 5 (Measures 169-176):** Features eighth and sixteenth notes, with trills (tr) in measures 169, 173, 174, and 175. Triplets are present in measures 175 and 176.

Figure 4: Table of Measures for Minuets (Part IV)

3 Related Links

The following are very interesting sites in that they allow the online rendering of MDGs:

- [Opus Infinity](#) - Collaborative work of Robbert Harms, Hein Moors, and Suus van Petegem whose goal is to unravel the mystery behind the tables used for generating MDGs. Site visitors can generate MDGs based on works of Kirnberger, Mozart, Stadler/Haydn, Bach, and Gerlach. Corresponding audio files (`mid`, `ogg`, and/or `mp3`) and image files (`pdf` or `png`) are also made available for listening, viewing, or downloading.
- [Mozart](#) - A site maintained by John Chuang that allows the site visitor to generate MDGs based on the work of Stadler/Haydn.
- [Mozart](#) - A site maintained by Marian Aldenhövel allows the visitor to generate a MDG (user-specified or randomly-generated) and the corresponding audio (`midi`, `wav`) and image files (`pdf`, `png`) based on *Musikalisches Würfelspiel*, *K. 516f*.
- [mozart.zip](#) - This is a Windows software (© 1995 VisionSoft) by John Chuang and Stephen Goodwin that generates MDG based on input from user and is available for *free* from [Amaranth Publishing](#).
- “[Mozart - Musical Game in C K. 516f](#),” Mozart Studies Online - The site of Hideo Noguchi that offers an explanation linking *Musikalisches Würfelspiel*, *K. 516f*, and *K. 294d (K. Anh. C 30.01)*.

4 Acknowledgments

My sincerest gratitude to Chris Walshaw et al. for the [ABC music notation](#); Jean-Francois Moine for [abcm2ps](#) and the accompanying examples, templates, and pointers for the appropriate use of these resources; Guido Gonzato for the [ABC Plus Project](#) and the [abcmidi resources](#) available there, more especially for the ABC resource book *Making Music with ABC 2*; James R. Allwright and Seymour Shlien for [abcmidi](#) source and binaries; [Artifex, Inc.](#) for Ghostscript v.10.00.0 (includes the `ps2pdf` converter); [Inkscape v.1.2.2](#) for the tool for converting SVGs to PDFs for inclusion into L^AT_EX documents; William Schelter for [Maxima v.5.47.0](#)—used for computing the permutation number; and [User:Martin H](#) for his [reply](#) to a TeX/LaTeX Stack Exchange question on including SVGs into L^AT_EX documents. Special thanks also to the [International Music Score Library Project \(IMSLP\)](#) for making available the score for [Table pour composer des Minuets et des Trios à la infinie](#) and [Amaranth Publishing](#) for a copy of [mozart.zip](#). Ditto to Machtelt Garrels for the book [Bash Guide for Beginners](#), Vivek Gite for the book [Linux Script Shell Tutorial](#), and Steve Parker for the [Unix/Linux Shell Cheatsheet](#). John Fogarty’s GitHub Site: [Latex CreateSpace BookCover](#) and Peter Wilson’s reply in TeX/LaTeX Stack Exchange on [designing a book cover](#), were sources of ideas, information, and materials for creating the book cover and title page, thanks to both of them; [LibreOffice Calc](#) for its use in the image creation of the book cover. Many thanks, too, to the [Debian Project](#) for the Debian 12 (Bookworm) GNU/Linux OS, [TeXLive 2024](#) for providing the T_EX distribution, and [GitHub](#) for its generosity in providing space for [the project](#).

5 Selected Minuets

10-3-6-9-4-9-11-8-2-9-10-5-12-4-8-12

gfmit::98:06:163:50:153:86:147:127:70:88:19:34:12:58:89:172::

Perm. No.: 36341129383431585

$\text{♩} = 90$

For audio (midi): [gfmit-10-3-6-9-4-9-11-8-2-9-10-5-12-4-8-12.mid](#)

10-6-11-11-11-8-3-3-5-10-11-10-9-6-4-7

gfmit::98:74:165:61:135:133:134:81:90:77:31:82:51:136:145:79::

Perm. No.: 19825759839008088

$\text{♩} = 90$

For audio (midi): [gfmit-10-6-11-11-11-8-3-3-5-10-11-10-9-6-4-7.mid](#)

10-6-11-11-7-3-10-7-9-11-5-10-5-9-9-3
 gfmitt::98:74:165:61:154:46:62:91:120:4:7:82:67:115:72:111::
 Perm. No.: 6444504023052170

$\text{♩} = 90$

For audio (midi): [gfmitt-10-6-11-11-7-3-10-7-9-11-5-10-5-9-9-3.mid](#)

10-8-2-11-2-10-8-8-10-10-8-12-6-10-7-5
 gfmitt::98:60:141:61:105:129:21:127:65:77:57:92:76:38:23:151::
 Perm. No.: 13383871407514474

$\text{♩} = 90$

For audio (midi): [gfmitt-10-8-2-11-2-10-8-8-10-10-8-12-6-10-7-5.mid](#)

10-9-7-11-3-12-8-11-10-10-12-6-4-5-11-11
 gfmitt::98:84:27:61:146:37:21:33:65:77:108:125:73:160:173:78::
 Perm. No.: 33588182031928775

$\text{♩} = 90$

For audio (midi): [gfmitt-10-9-7-11-3-12-8-11-10-10-12-6-4-5-11-11.mid](#)

11-10-9-7-8-6-7-9-5-9-12-10-2-4-4-12
 gfmit::3:142:114:167:99:97:118:94:90:88:108:82:112:58:145:79::
 Perm. No.: 34933034357386362

$\text{♩} = 90$

For audio (midi): [gfmit-11-10-9-7-8-6-7-9-5-9-12-10-2-4-4-12.mid](#)

11-11-8-8-7-2-6-8-3-6-12-6-6-10-5-6
 gfmit::3:87:171:53:154:122:36:127:117:143:108:125:76:38:52:170::
 Perm. No.: 16489443629681076

$\text{♩} = 90$

For audio (midi): [gfmit-11-11-8-8-7-2-6-8-3-6-12-6-6-10-5-6.mid](#)

11-2-2-3-11-9-6-9-11-2-5-12-3-5-11-4
 gfmit::3:22:141:63:135:86:36:94:102:121:7:92:174:160:173:78::
 Perm. No.: 10801713112119478

$\text{♩} = 90$

For audio (midi): [gfmit-11-2-2-3-11-9-6-9-11-2-5-12-3-5-11-4.mid](#)

11-4-2-7-8-11-2-2-2-12-9-2-5-3-12-6
 gfmtit::3:95:141:167:99:47:11:30:70:20:48:9:67:18:44:131::
 Perm. No.: 18682394685378742

$\text{♩} = 90$

For audio (midi): [gfmtit-11-4-2-7-8-11-2-2-2-12-9-2-5-3-12-6.mid](#)

11-5-11-6-12-8-4-6-11-8-6-11-9-7-4-12
 gfmtit::3:17:165:45:28:133:110:107:102:155:64:164:51:162:145:79::
 Perm. No.: 35047275885260088

$\text{♩} = 90$

For audio (midi): [gfmtit-11-5-11-6-12-8-4-6-11-8-6-11-9-7-4-12.mid](#)

11-5-9-11-8-11-11-9-2-3-3-6-9-6-9-7
 gfmtit::3:17:114:61:99:47:147:94:70:39:126:125:51:136:72:111::
 Perm. No.: 21550653855203010

$\text{♩} = 90$

For audio (midi): [gfmtit-11-5-9-11-8-11-11-9-2-3-3-6-9-6-9-7.mid](#)

11-6-6-12-10-4-9-5-12-12-7-3-11-11-10-5
 gfmt::3:74:163:103:75:55:169:100:35:20:150:56:144:59:149:8::
 Perm. No.: 14462849310822868

$\text{♩} = 90$

For audio (midi): [gfmt-11-6-6-12-10-4-9-5-12-12-7-3-11-11-10-5.mid](#)

12-11-8-5-6-4-5-5-9-7-9-4-5-6-6-6
 gfmt::54:87:171:85:80:55:159:100:120:71:48:132:67:136:1:93::
 Perm. No.: 16705694265312151

$\text{♩} = 90$

For audio (midi): [gfmt-12-11-8-5-6-4-5-5-9-7-9-4-5-6-6-6.mid](#)

12-6-9-4-3-11-9-10-6-5-2-7-4-8-8-11
 gfmt::54:74:114:13:146:47:169:123:25:176:26:29:73:168:89:172::
 Perm. No.: 32646665446662531

$\text{♩} = 90$

For audio (midi): [gfmt-12-6-9-4-3-11-9-10-6-5-2-7-4-8-8-11.mid](#)

12-6-9-8-11-5-9-6-3-5-2-11-5-2-12-9
 gfmtit::54:74:114:53:135:2:169:107:117:176:26:164:67:49:44:131::
 Perm. No.: 26248161664331541

♩ = 90

For audio (midi): [gfmtit-12-6-9-8-11-5-9-6-3-5-2-11-5-2-12-9.mid](#)

12-6-9-9-10-12-8-2-7-7-12-8-7-11-3-12
 gfmtit::54:74:114:50:75:37:21:30:138:71:108:175:101:59:116:83::
 Perm. No.: 34821240026281423

♩ = 90

For audio (midi): [gfmtit-12-6-9-9-10-12-8-2-7-7-12-8-7-11-3-12.mid](#)

2-4-11-3-8-9-9-8-3-12-12-6-5-8-2-4
 gfmtit::96:95:165:63:99:86:169:127:117:20:108:125:67:168:109:14::
 Perm. No.: 7793156777440959

♩ = 90

For audio (midi): [gfmtit-2-4-11-3-8-9-9-8-3-12-12-6-5-8-2-4.mid](#)

2-4-8-8-3-4-3-4-7-6-10-4-12-3-9-5
 gfmtit::96:95:171:53:146:55:134:24:138:143:19:132:12:18:72:111::
 Perm. No.: 13869717282513181

$\text{♩} = 90$

For audio (midi): [gfmtit-2-4-8-8-3-4-3-4-7-6-10-4-12-3-9-5.mid](#)

2-5-3-4-12-4-4-11-12-5-10-3-8-7-7-10
 gfmtit::96:17:128:13:28:55:110:33:35:176:19:56:43:162:23:151::
 Perm. No.: 28483120626552769

$\text{♩} = 90$

For audio (midi): [gfmtit-2-5-3-4-12-4-4-11-12-5-10-3-8-7-7-10.mid](#)

2-8-9-4-9-4-9-3-4-4-5-4-5-11-9-12
 gfmtit::96:60:114:13:140:55:169:81:66:139:7:132:67:59:72:111::
 Perm. No.: 36885686972750133

$\text{♩} = 90$

For audio (midi): [gfmtit-2-8-9-4-9-4-9-3-4-4-5-4-5-11-9-12.mid](#)

3-11-10-5-10-5-3-5-12-10-7-2-4-12-2-4
 gfm1t::32:87:42:85:75:2:134:100:35:77:150:9:73:124:109:14::
 Perm. No.: 7914682798399687

$\text{♩} = 90$

For audio (midi): [gfm1t-3-11-10-5-10-5-3-5-12-10-7-2-4-12-2-4.mid](#)

3-3-5-6-12-4-6-5-8-7-10-9-3-9-4-11
 gfm1t::32:06:113:45:28:55:36:100:16:71:19:166:174:115:145:79::
 Perm. No.: 31295000241348109

$\text{♩} = 90$

For audio (midi): [gfm1t-3-3-5-6-12-4-6-5-8-7-10-9-3-9-4-11.mid](#)

3-4-3-10-9-10-6-8-4-5-4-4-7-9-12-2
 gfm1t::32:95:128:156:140:129:36:127:66:176:15:132:101:115:44:131::
 Perm. No.: 3686799637660768

$\text{♩} = 90$

For audio (midi): [gfm1t-3-4-3-10-9-10-6-8-4-5-4-4-7-9-12-2.mid](#)

3-5-3-12-10-7-5-6-8-4-4-10-7-5-12-8
 gfmit::32:17:128:103:75:68:159:107:16:139:15:82:101:160:44:131::
 Perm. No.: 22550309021916326

$\text{♩} = 90$

For audio (midi): [gfmit-3-5-3-12-10-7-5-6-8-4-4-10-7-5-12-8.mid](#)

3-6-12-11-3-7-11-10-4-7-5-12-4-2-4-4
 gfmit::32:74:10:61:146:68:147:123:66:71:7:92:73:49:145:79::
 Perm. No.: 8293832753311140

$\text{♩} = 90$

For audio (midi): [gfmit-3-6-12-11-3-7-11-10-4-7-5-12-4-2-4-4.mid](#)

3-6-9-5-7-6-6-3-11-3-11-6-4-4-10-5
 gfmit::32:74:114:85:154:97:36:81:102:39:31:125:73:58:149:8::
 Perm. No.: 14224040416964490

$\text{♩} = 90$

For audio (midi): [gfmit-3-6-9-5-7-6-6-3-11-3-11-6-4-4-10-5.mid](#)

4-11-12-9-3-12-4-10-5-12-6-7-7-12-3-6
 gfmtit::69:87:10:50:146:37:110:123:90:20:64:29:101:124:116:83::
 Perm. No.: 15864742100791422

$\text{♩} = 90$

For audio (midi): [gfmtit-4-11-12-9-3-12-4-10-5-12-6-7-7-12-3-6.mid](#)

4-12-12-6-3-12-5-5-11-6-8-9-4-10-8-2
 gfmtit::69:130:10:45:146:37:159:100:102:143:57:166:73:38:89:172::
 Perm. No.: 2330110722377914

$\text{♩} = 90$

For audio (midi): [gfmtit-4-12-12-6-3-12-5-5-11-6-8-9-4-10-8-2.mid](#)

4-2-6-8-6-4-3-8-10-4-10-12-12-6-10-12
 gfmtit::69:22:163:53:80:55:134:127:65:139:19:92:12:136:149:8::
 Perm. No.: 37096158639646516

$\text{♩} = 90$

For audio (midi): [gfmtit-4-2-6-8-6-4-3-8-10-4-10-12-12-6-10-12.mid](#)

4-3-10-6-4-2-7-2-7-4-8-2-10-5-9-6
 gfmit::69:06:42:45:153:122:118:30:138:139:57:9:137:160:72:111::
 Perm. No.: 17723707725646343

$\text{♩} = 90$

For audio (midi): [gfmit-4-3-10-6-4-2-7-2-7-4-8-2-10-5-9-6.mid](#)

4-3-11-6-11-2-7-2-7-5-9-11-2-11-12-10
 gfmit::69:06:165:45:135:122:118:30:138:176:48:164:112:59:44:131::
 Perm. No.: 30319724957798301

$\text{♩} = 90$

For audio (midi): [gfmit-4-3-11-6-11-2-7-2-7-5-9-11-2-11-12-10.mid](#)

4-4-2-2-3-4-4-9-6-3-7-4-10-10-10-8
 gfmit::69:95:141:41:146:55:110:94:25:39:150:132:137:38:149:8::
 Perm. No.: 22023847563705397

$\text{♩} = 90$

For audio (midi): [gfmit-4-4-2-2-3-4-4-9-6-3-7-4-10-10-10-8.mid](#)

4-9-3-9-6-8-2-12-7-11-4-4-3-4-4-7
 gfmit::69:84:128:50:80:133:11:5:138:4:15:132:174:58:145:79::
 Perm. No.: 19744153956803807

$\text{♩} = 90$

For audio (midi): [gfmit-4-9-3-9-6-8-2-12-7-11-4-4-3-4-4-7.mid](#)

5-4-2-5-11-8-5-10-8-4-4-12-11-7-12-6
 gfmit::40:95:141:85:135:133:159:123:16:139:15:92:144:162:44:131::
 Perm. No.: 18827510391152357

$\text{♩} = 90$

For audio (midi): [gfmit-5-4-2-5-11-8-5-10-8-4-4-12-11-7-12-6.mid](#)

5-4-4-3-5-2-9-5-5-8-5-2-2-6-12-8
 gfmit::40:95:158:63:161:122:169:100:90:155:7:9:112:136:44:131::
 Perm. No.: 22565384284110672

$\text{♩} = 90$

For audio (midi): [gfmit-5-4-4-3-5-2-9-5-5-8-5-2-2-6-12-8.mid](#)

6-4-10-9-4-10-2-2-4-6-4-6-5-7-7-4
 gfmtit::148:95:42:50:153:129:11:30:66:143:15:125:67:162:23:151::
 Perm. No.: 9487706669180272

$\text{♩} = 90$

For audio (midi): [gfmtit-6-4-10-9-4-10-2-2-4-6-4-6-5-7-7-4.mid](#)

6-5-10-3-9-10-9-2-3-11-11-3-5-12-9-6
 gfmtit::148:17:42:63:140:129:169:30:117:4:31:56:67:124:72:111::
 Perm. No.: 17929476471698599

$\text{♩} = 90$

For audio (midi): [gfmtit-6-5-10-3-9-10-9-2-3-11-11-3-5-12-9-6.mid](#)

6-6-4-4-2-7-12-12-3-10-5-10-9-3-10-6
 gfmtit::148:74:158:13:105:68:106:5:117:77:7:82:51:18:149:8::
 Perm. No.: 18005329685443457

$\text{♩} = 90$

For audio (midi): [gfmtit-6-6-4-4-2-7-12-12-3-10-5-10-9-3-10-6.mid](#)

6-7-10-2-4-5-3-3-12-10-2-4-10-2-2-6
 gfmtit::148:157:42:41:153:2:134:81:35:77:26:132:137:49:109:14::
 Perm. No.: 15213356144670315

$\text{♩} = 90$

For audio (midi): [gfmtit-6-7-10-2-4-5-3-3-12-10-2-4-10-2-2-6.mid](#)

6-7-12-6-4-2-4-10-8-7-2-7-9-6-9
 gfmtit::148:157:10:45:153:122:110:123:16:71:26:29:101:115:1:93::
 Perm. No.: 24401162832636078

$\text{♩} = 90$

For audio (midi): [gfmtit-6-7-12-6-4-2-4-10-8-7-2-7-9-6-9.mid](#)

6-8-4-7-10-9-7-8-12-8-11-2-8-7-2-10
 gfmtit::148:60:158:167:75:86:118:127:35:155:31:9:43:162:109:14::
 Perm. No.: 26756755622474014

$\text{♩} = 90$

For audio (midi): [gfmtit-6-8-4-7-10-9-7-8-12-8-11-2-8-7-2-10.mid](#)

6-8-6-8-5-7-3-6-5-12-12-10-12-10-7-8
 gfmtit::148:60:163:53:161:68:134:107:90:20:108:82:12:38:23:151::
 Perm. No.: 20995565613375754

$\text{♩} = 90$

For audio (midi): [gfmtit-6-8-6-8-5-7-3-6-5-12-12-10-12-10-7-8.mid](#)

7-10-8-6-5-11-12-11-2-10-3-11-6-2-7-10
 gfmtit::104:142:171:45:161:47:106:33:70:77:126:164:76:49:23:151::
 Perm. No.: 28322411696361844

$\text{♩} = 90$

For audio (midi): [gfmtit-7-10-8-6-5-11-12-11-2-10-3-11-6-2-7-10.mid](#)

7-12-11-5-8-12-7-3-12-6-9-12-12-6-6-7
 gfmtit::104:130:165:85:99:37:118:81:35:143:48:92:12:136:1:93::
 Perm. No.: 20525237818968570

$\text{♩} = 90$

For audio (midi): [gfmtit-7-12-11-5-8-12-7-3-12-6-9-12-12-6-6-7.mid](#)

7-8-9-3-3-5-4-4-3-9-10-5-7-11-5-4
 gfmtit::104:60:114:63:146:2:110:24:117:88:19:34:101:59:52:170::
 Perm. No.: 8928384174982388

$\text{♩} = 90$

For audio (midi): [gfmtit-7-8-9-3-3-5-4-4-3-9-10-5-7-11-5-4.mid](#)

8-4-7-11-4-9-5-10-6-4-10-12-2-12-8-9
 gfmtit::152:95:27:61:153:86:159:123:25:139:19:92:112:124:89:172::
 Perm. No.: 25172983032726195

$\text{♩} = 90$

For audio (midi): [gfmtit-8-4-7-11-4-9-5-10-6-4-10-12-2-12-8-9.mid](#)

8-6-11-10-8-12-7-3-4-6-3-5-10-9-2-3
 gfmtit::152:74:165:156:99:37:118:81:66:143:126:34:137:115:109:14::
 Perm. No.: 4040823952220480

$\text{♩} = 90$

For audio (midi): [gfmtit-8-6-11-10-8-12-7-3-4-6-3-5-10-9-2-3.mid](#)

8-8-11-3-11-4-7-11-12-8-3-12-8-5-6-11
 gfmit::152:60:165:63:135:55:118:33:35:155:126:92:43:160:1:93::
 Perm. No.: 31874799021353317

$\text{♩} = 90$

For audio (midi): [gfmit-8-8-11-3-11-4-7-11-12-8-3-12-8-5-6-11.mid](#)

9-11-6-2-8-12-3-11-9-4-4-11-8-11-8-6
 gfmit::119:87:163:41:99:37:134:33:120:139:15:164:43:59:89:172::
 Perm. No.: 17563320663922426

$\text{♩} = 90$

For audio (midi): [gfmit-9-11-6-2-8-12-3-11-9-4-4-11-8-11-8-6.mid](#)

9-6-12-3-9-6-11-7-12-3-8-4-12-11-9-10
 gfmit::119:74:10:63:140:97:147:91:35:39:57:132:12:59:72:111::
 Perm. No.: 29310732353656608

$\text{♩} = 90$

For audio (midi): [gfmit-9-6-12-3-9-6-11-7-12-3-8-4-12-11-9-10.mid](#)

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