towards completeness

mike winter (2008)

towards completeness

for adam overton and quatuor bozzini

the first steps to create a version of the score are to print pages 1 through 78 on transparencies (if not already provided so) and follow this procedure:

- randomly choose one of the transparencies. each one corresponds to an edge in a graph.
- randomly choose from the list of next possible edges/pages. the choices will be visible when placed on top of white opaque paper and correspond to the number on the top left of the transparencies.
- repeat step 2 till all the transparencies have been chosen. when stacked on top of each other, the list of next possible edges/pages will change accordingly.

note: each player does the above procedure independently. it is advised to keep the pages stacked in order with the most recently chosen edge/page on bottom. it may also be helpful to keep an ordered list of the chosen edges/pages. a custom written computer program is available that automatically generates a score.

a realization is composed of 16 sections diagrammed on the following page, which contains additional performance instructions as well as further instructions for creating a version of the score. the first and last sections consist exclusively of silence. the second and second to last sections consist exclusively of a sustained high-pitched tone, which sustains through the other middle sections. this tone should be as continuous/unchanging as possible. its entrance and exit may be accented in unison by a pitched-percussion instrument of long decay. for the entrance accent, the percussion instrument is allowed to let vibrate. the exit accent is punctuated (short).

in the other sections, the performers not sounding the high sustained tone interpret the graph by exploring morphologies (or phrases/paths) in the structure as follows:

- successive pitches in a morphology must be connected by edges in the graph.
- morphologies are at least 2 tones long and at most the number indicated in the section diagram.
- pitches do not repeat within a morphology. however, the first pitch of a new morphology may be the same as the last pitch of the previous morphology. phrases should generally ascend or descend within the pitch-space.
- except for the ending tone of a morphology, all others are of equal duration. this duration may (and should) vary from morphology to morphology from as much as 2 seconds per tone to the minimum tone duration given in the section diagram.
- except for the ending tone of a morphology, all others are either slurred or punctuated. slurred morphologies should occur more often than punctuated ones.
- typically, the ending tone of a morphology may be punctuated or held any duration less than the approximated morphology length up until the ending tone. However, the last tone should occasionally sound for a *very* long time. punctuated ending tones should occur with equal frequency to longer ending tones.
- a morphology may be followed by silence of any duration less than the approximated morphology length.

note: within the limits set forth in the instructions, performers should explore various possibilities to the extent possible. For example, by varying paths through the graph and morphology lengths.

* for all performers an equal dynamic. throughout, clear but not loud.

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section number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
section duration	≥ 1′	≥ 5′	18″ – 36″	17″ – 34″	16″ – 32″	15″ – 30″	14″ – 28″	13″ – 26″	12″ – 24″	11″ – 22″	10″ – 20″	9″ – 18″	8″ – 16″	7″ – 14″	≥ 5′	≥ 1′
events	silence	*initiate sustained high-pitched tone*	0″	18″	35″	51″	1′06″	1′20″	1′33″	1′45″	1′56″	2′06″	2′15″	2′23″ 2′30″	*end sustained high-pitched tone*	silence
			begin graph interpretation											*end graph interpretation*		

minimum tone durarion	1″	.74″	.58″	.46″	.37″	.29″	.23″	.17″	.12″	.08″	.04″	0″
maximum morphology length	2	3	4	5	6	7	8	9	10	11	12	13
number of edges added	1	2	3	4	5	6	7	8	9	10	11	12

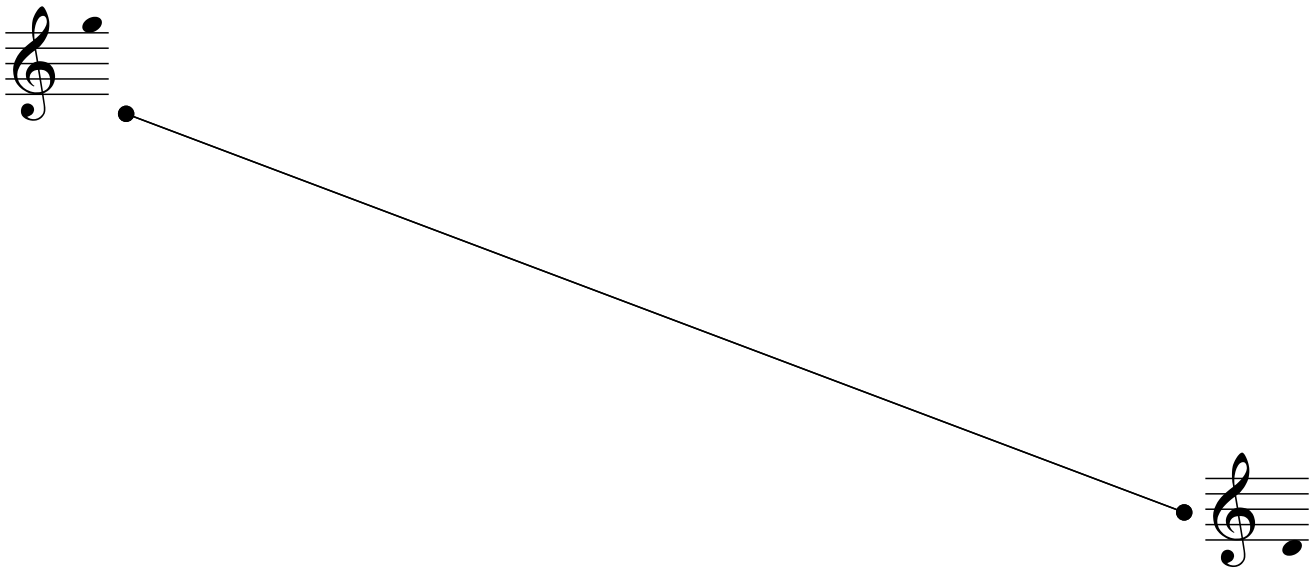
• sections 1 and 16 should be the same the same duration as well as sections 2 and 15, which should be longer. both, preferably long. only sections 3 through 14 are spaced proportionally to time in the diagram.
• the durations of sections 3 through 14 may be scaled uniformly by any factor such that their total duration is less than or equal to half the duration of section 2. a scaling by a multiple of 2 is given. time markings starting from section 3 are given for the unscaled duration.
• the high-pitched sustained tone starting at the beginning of section 2 should be the highest pitch in the piece and sustain continuously till the end of section 15. perhaps a harmonic.
• performers interpreting the graph may enter staggered; however, at the end of section 14, they must stop simultaneously with a punctuated tone.
• the number of edges added is the number of transparencies added in the order determined by the procedure on the preceding page, which ensures a connected graph. by section 14, the graph is complete in that all vertices will be connected to all other vertices. it is perhaps best to make copies (on white paper) beforehand so that their is a page for each section; each with the proper number of edges—1, 3, 6, 10, 15, 21, 28, 36, 45, 55, 66, 78 for sections 3 through 14. versions of the score generated by custom computer software are provided as examples as well as usable versions. the software can be obtained to generate new versions instead of using the transparencies.
• the following tuning across all octaves is preferred over 12-tone equal temperaments (written as the nearest pitch in 12-tone equal temperament with a deviation in cents)—G+0, A+4, B-14, C#-49, D+2, F-31. another option is to predetermine an arbitrary cent deviation up to or down to 50 cents from each written pitch in 12-tone equal temperament. the deviations should be the same for all performers.

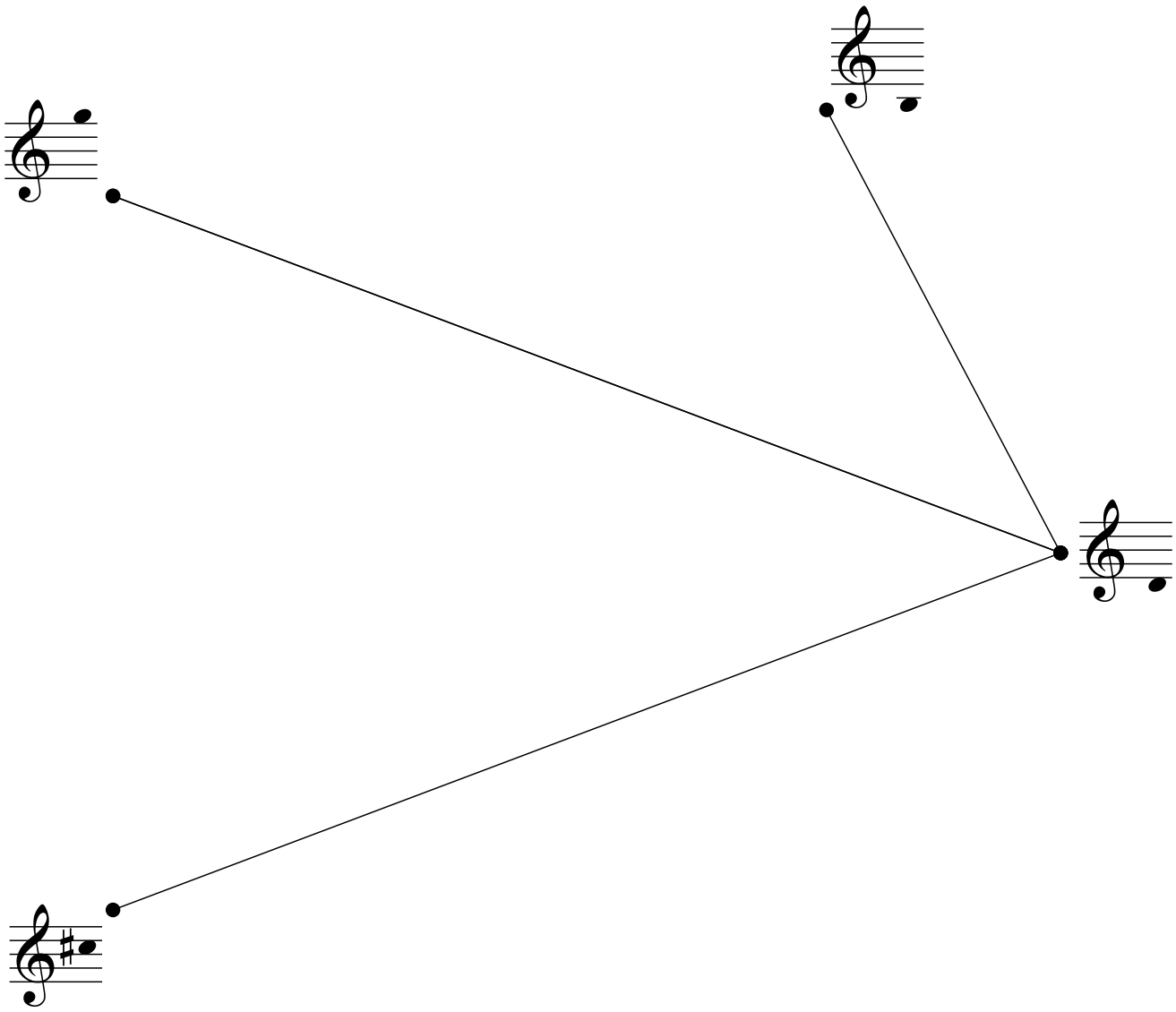
mbw (2008)

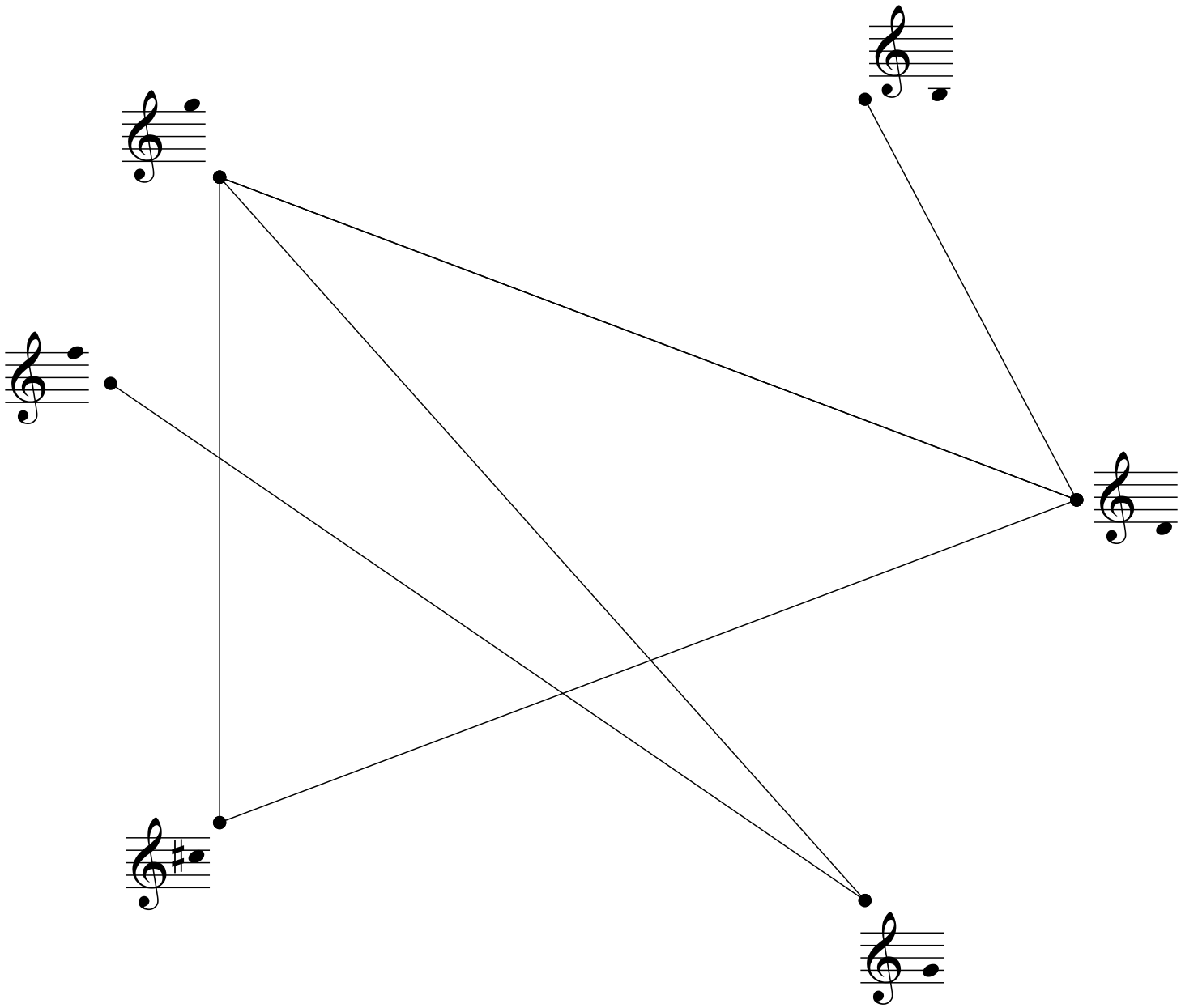
towards completeness

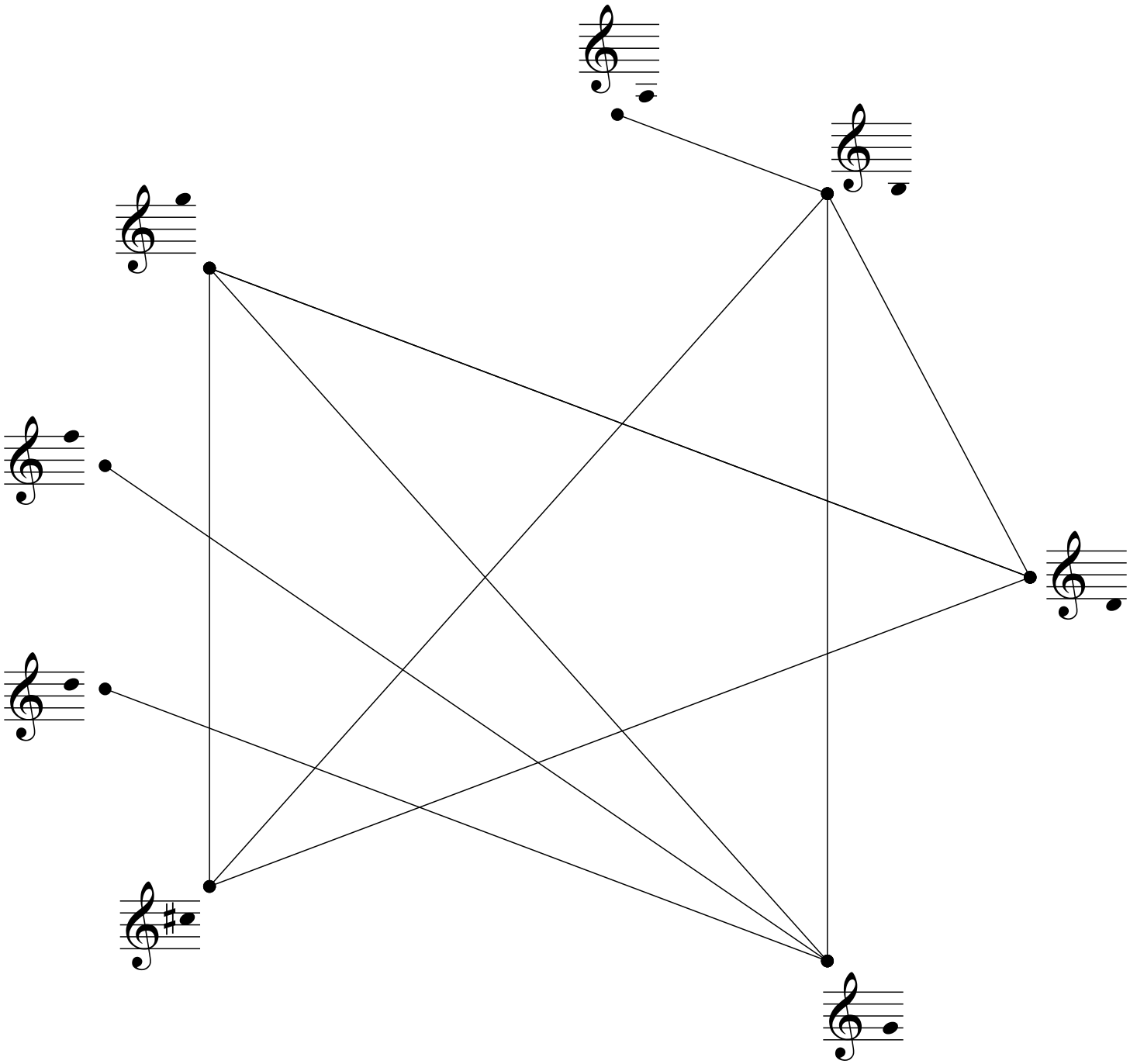
score realization 1
sections 3 - 14

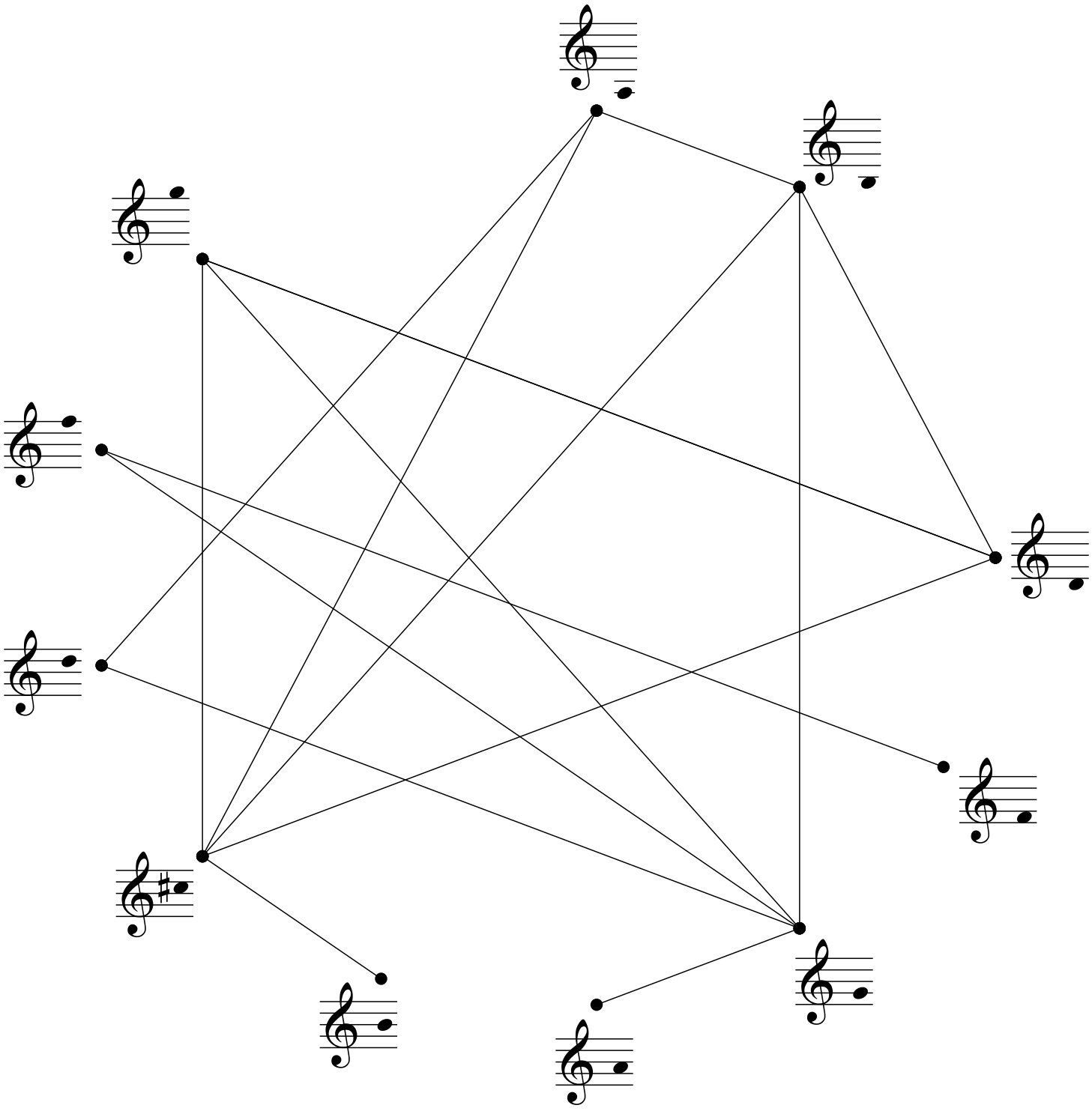
mike winter (2008)

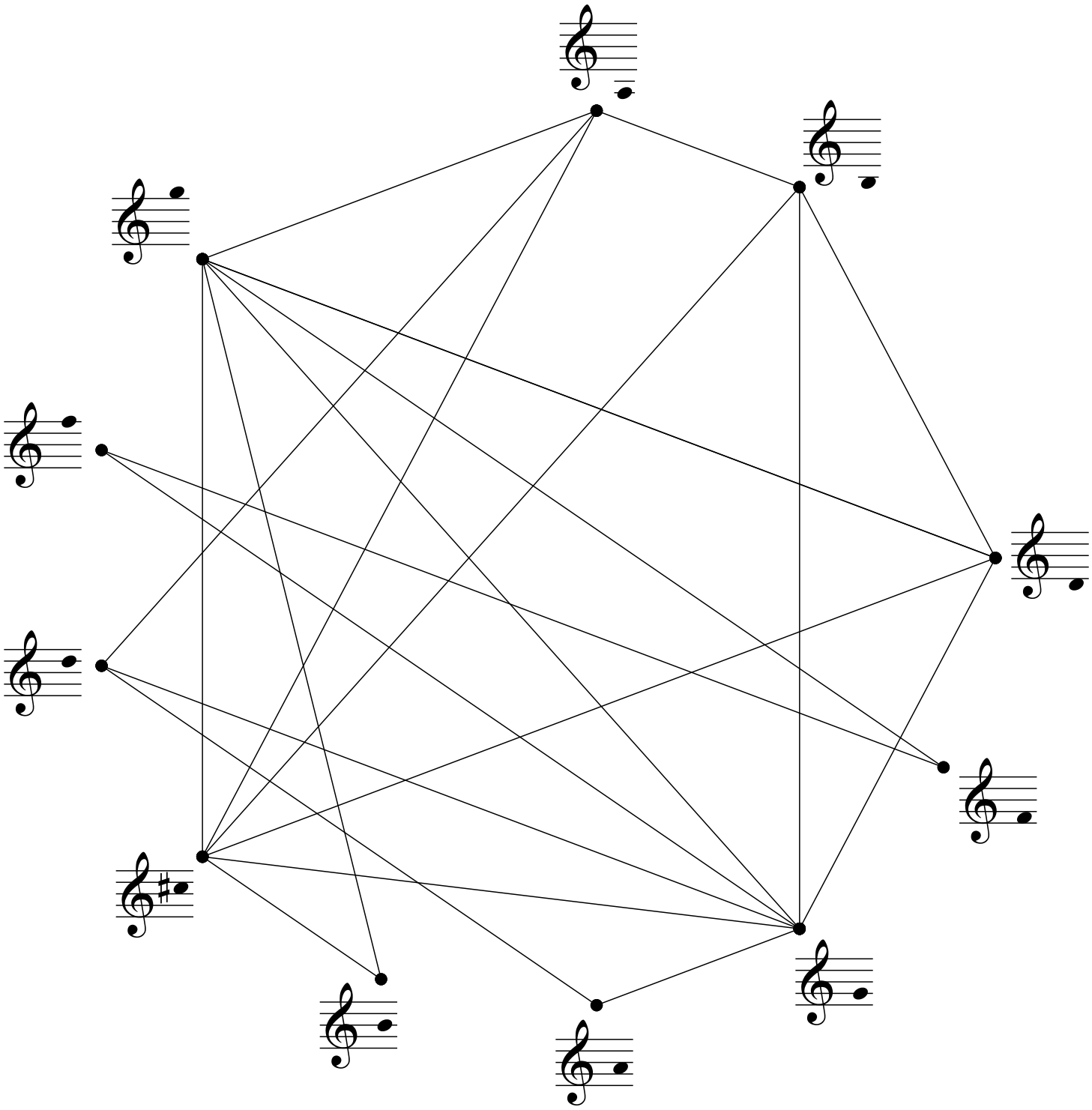


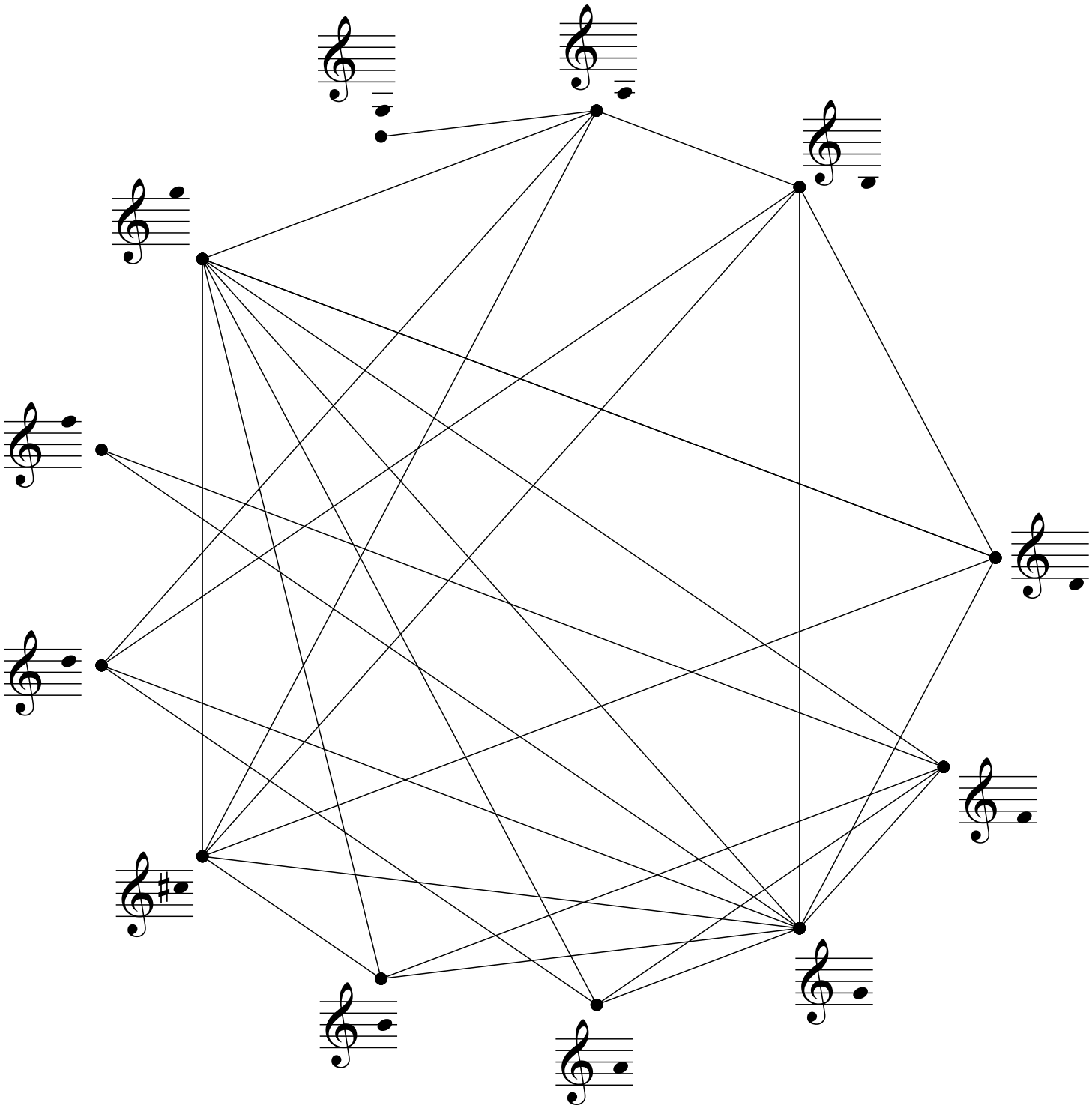


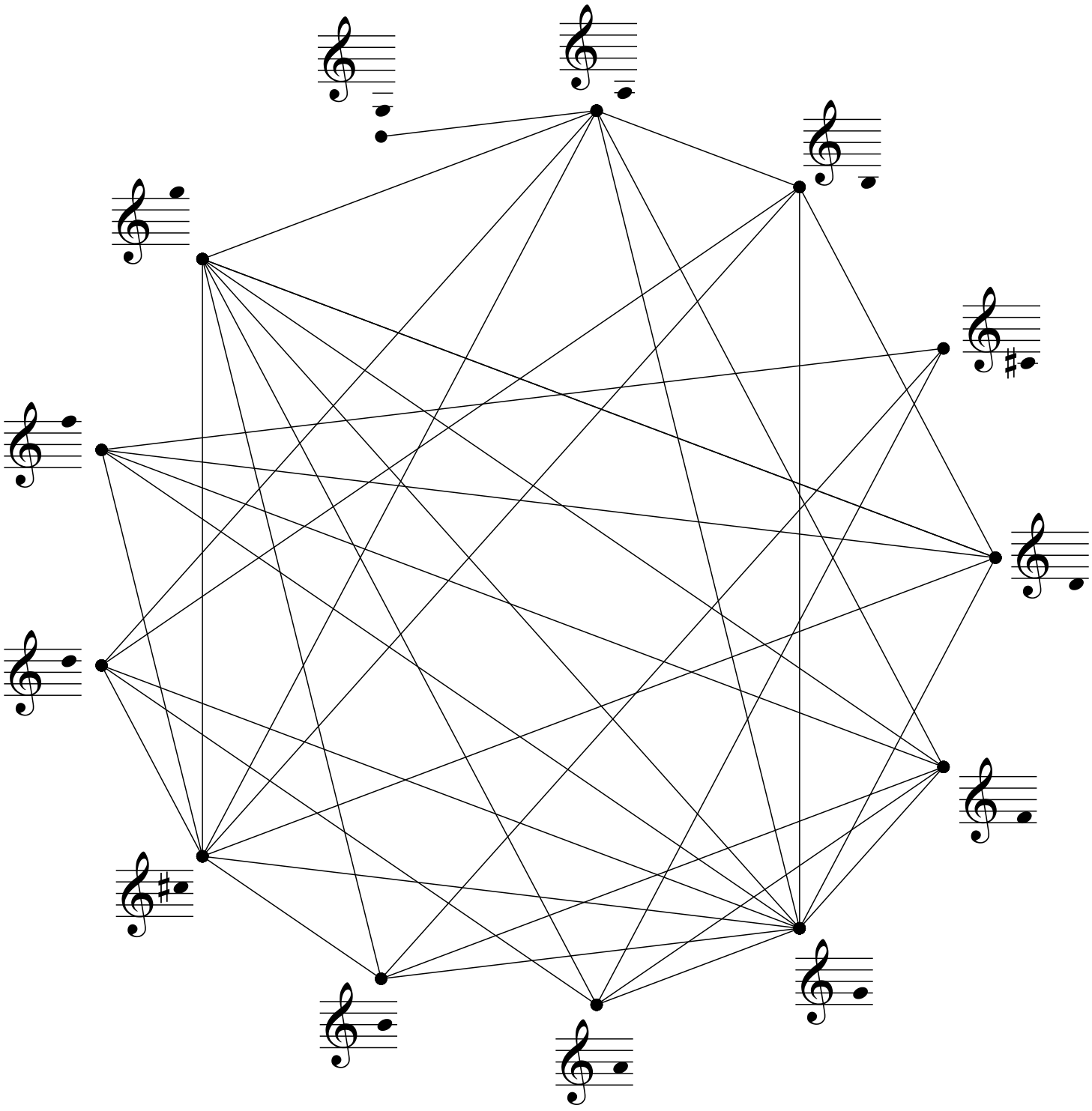


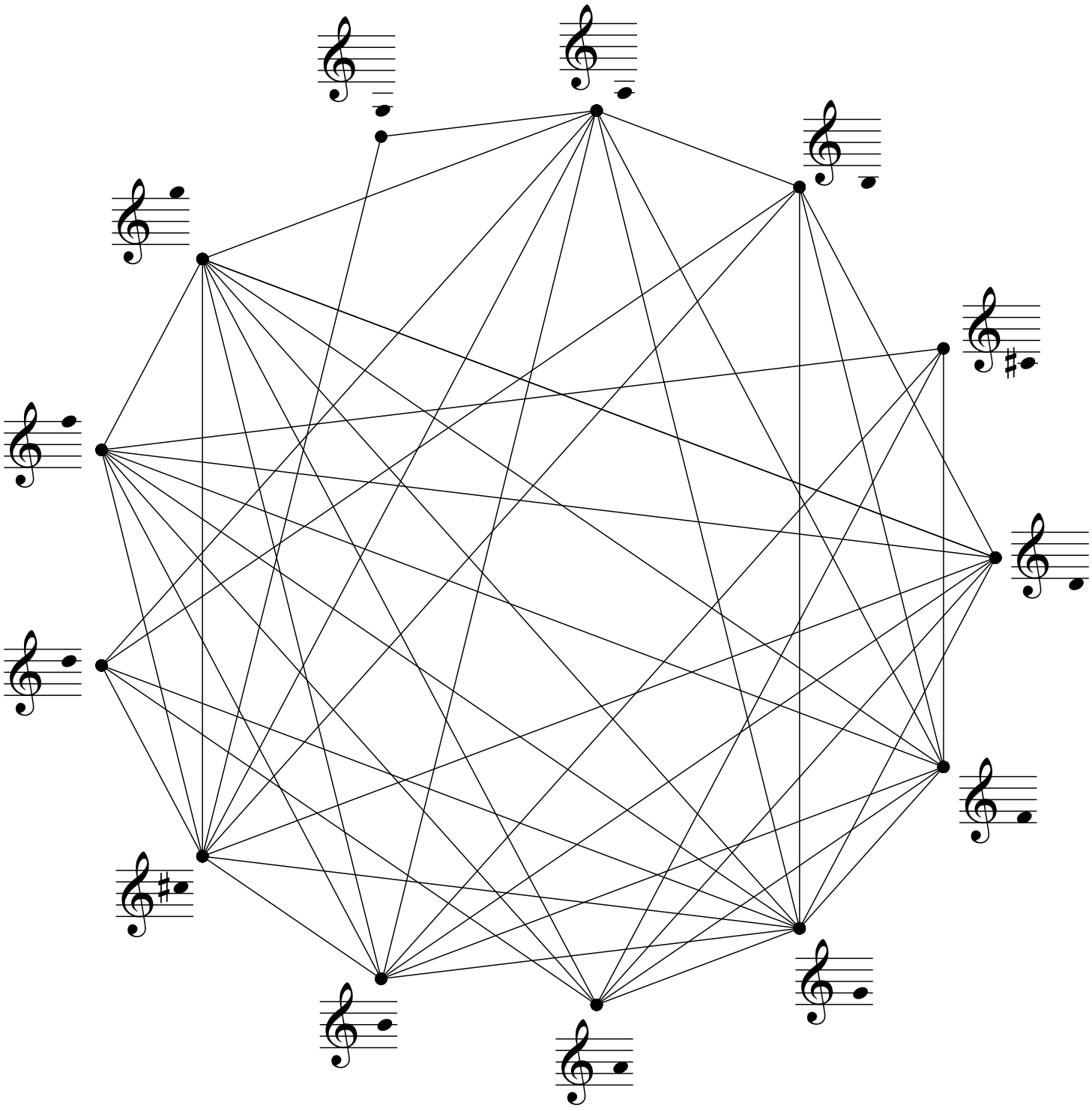


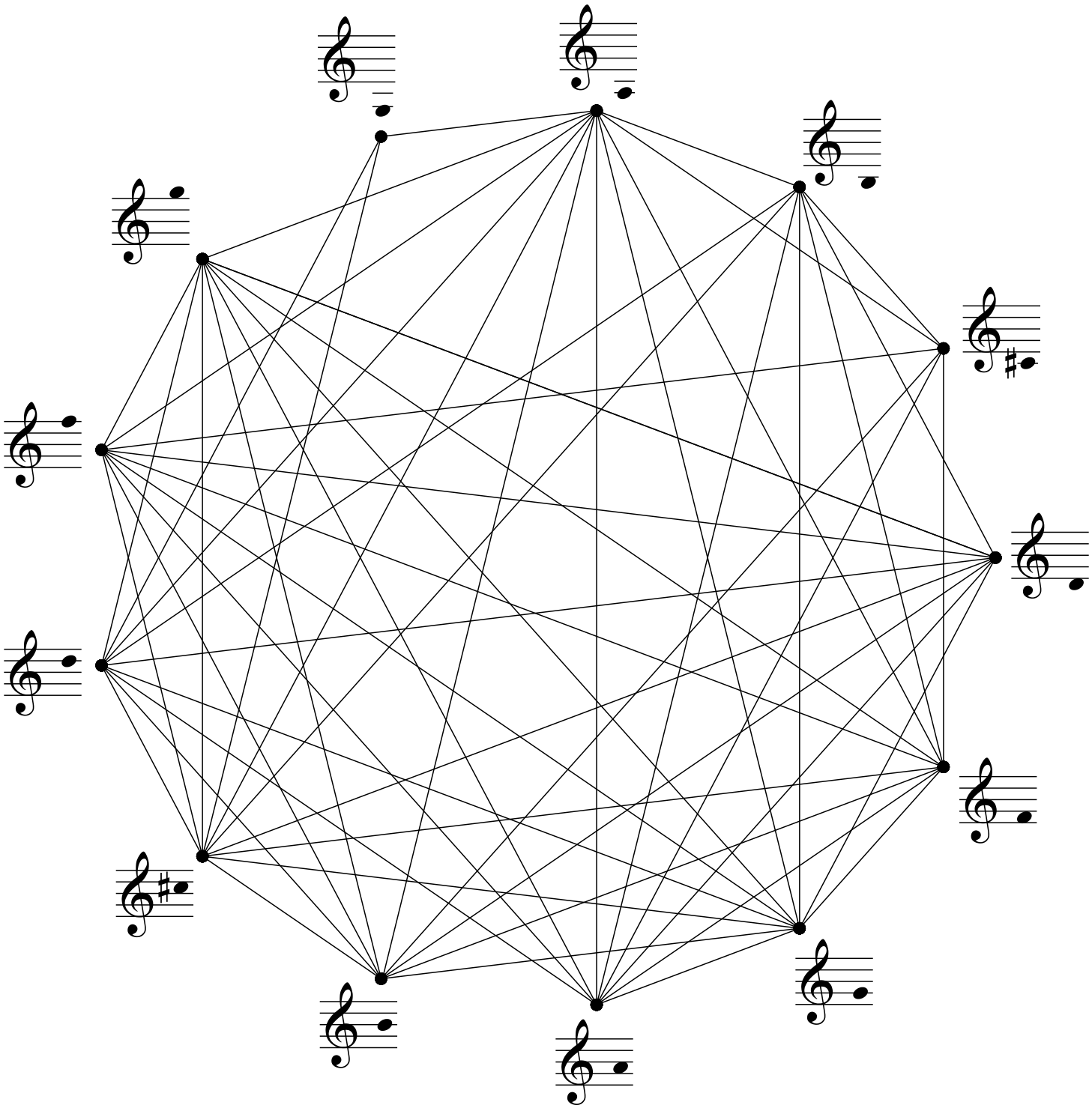


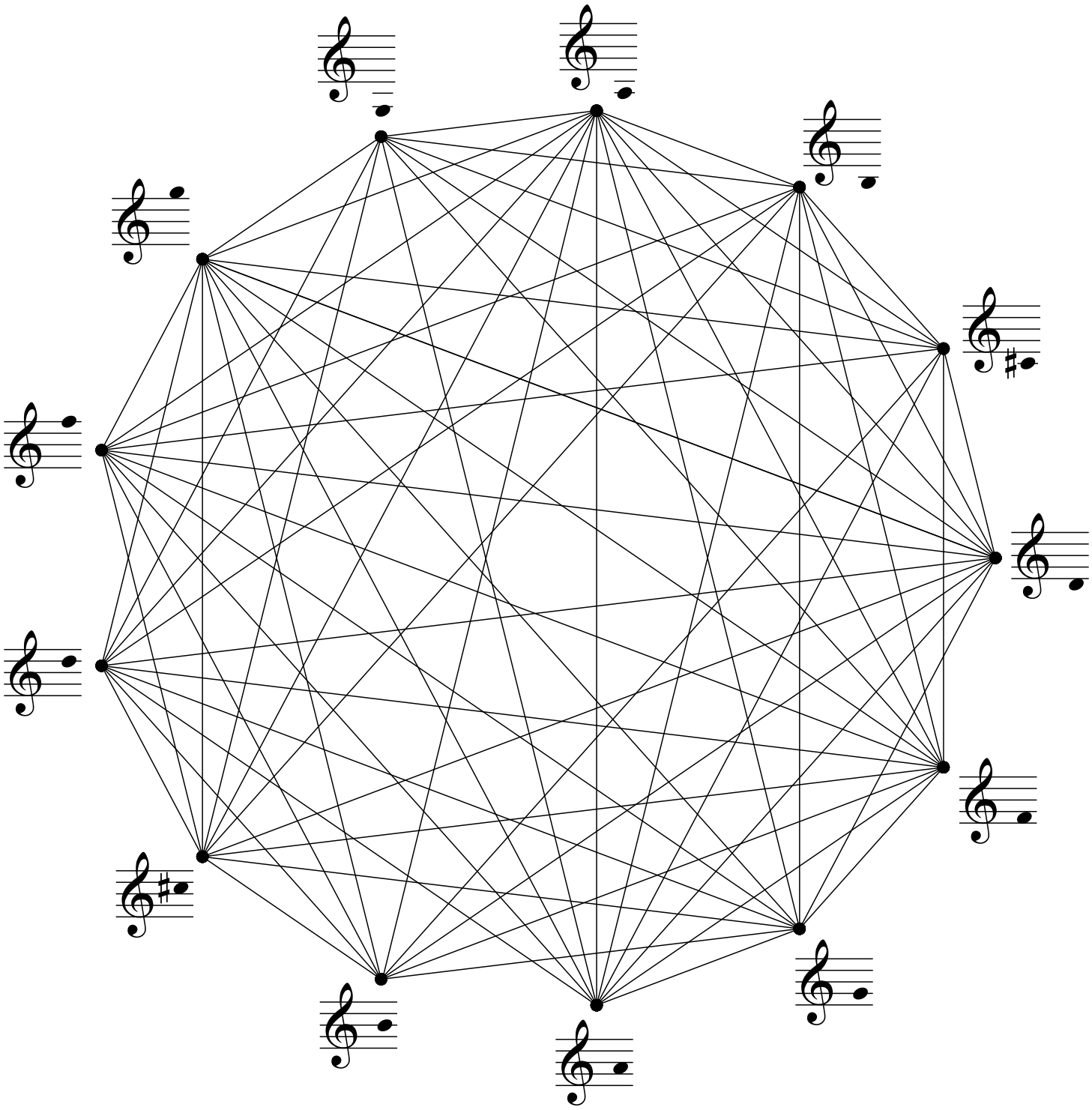


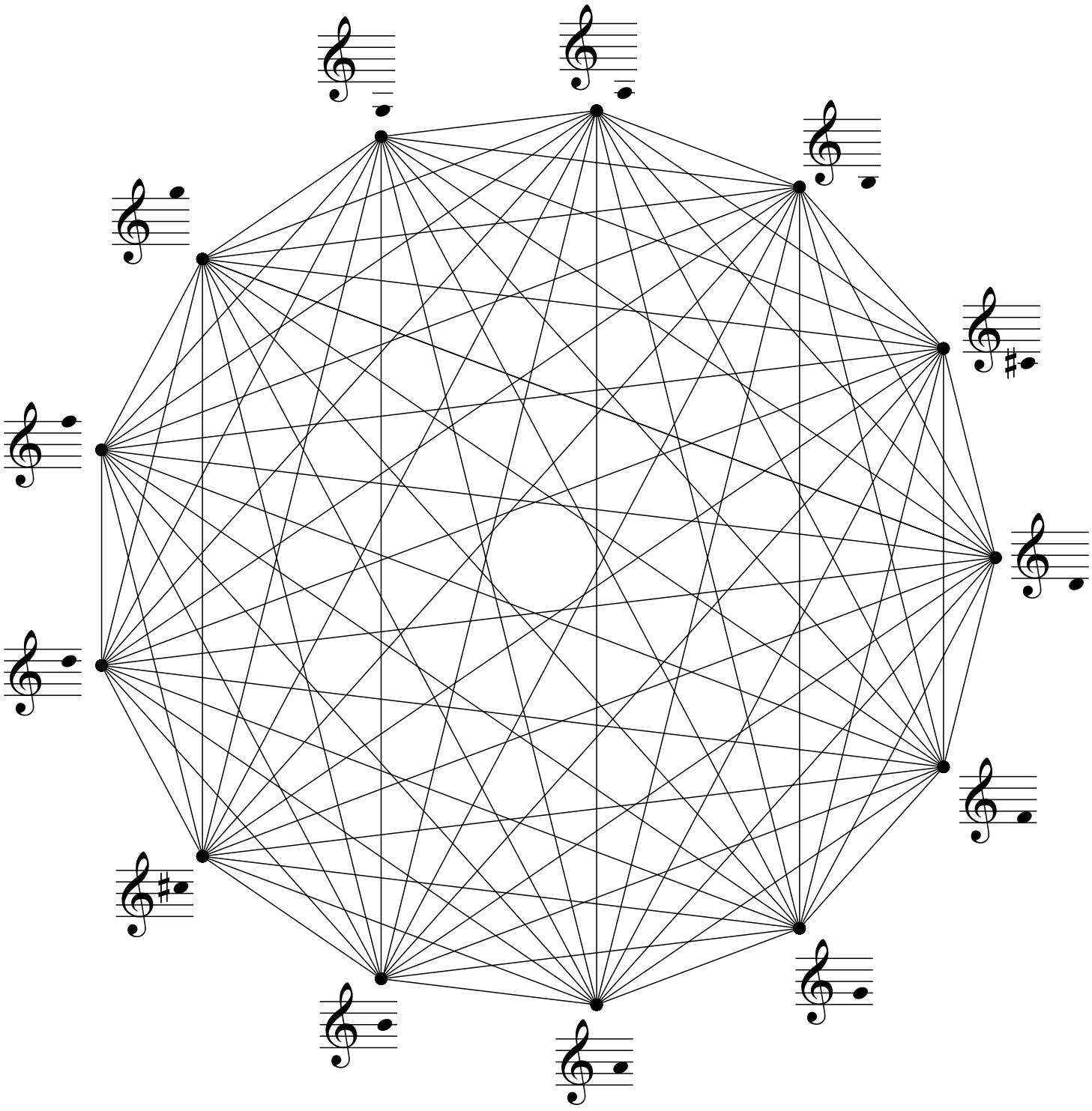








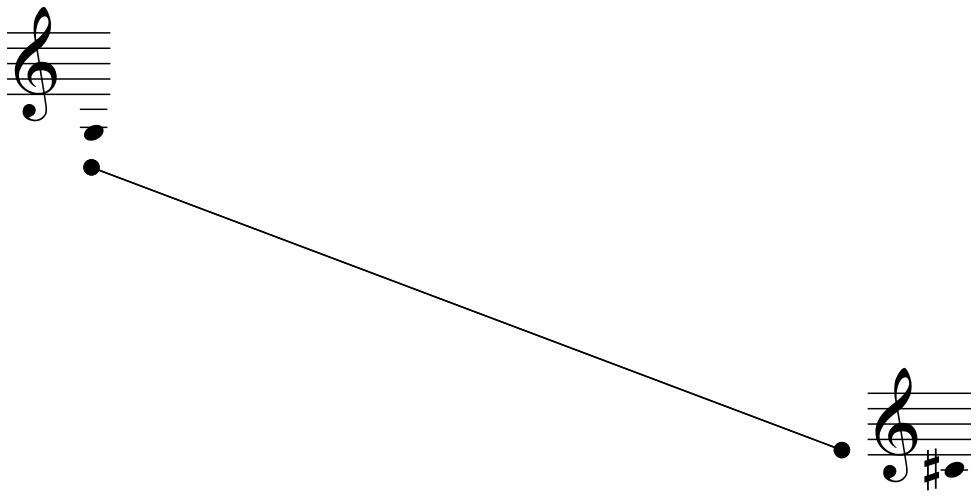


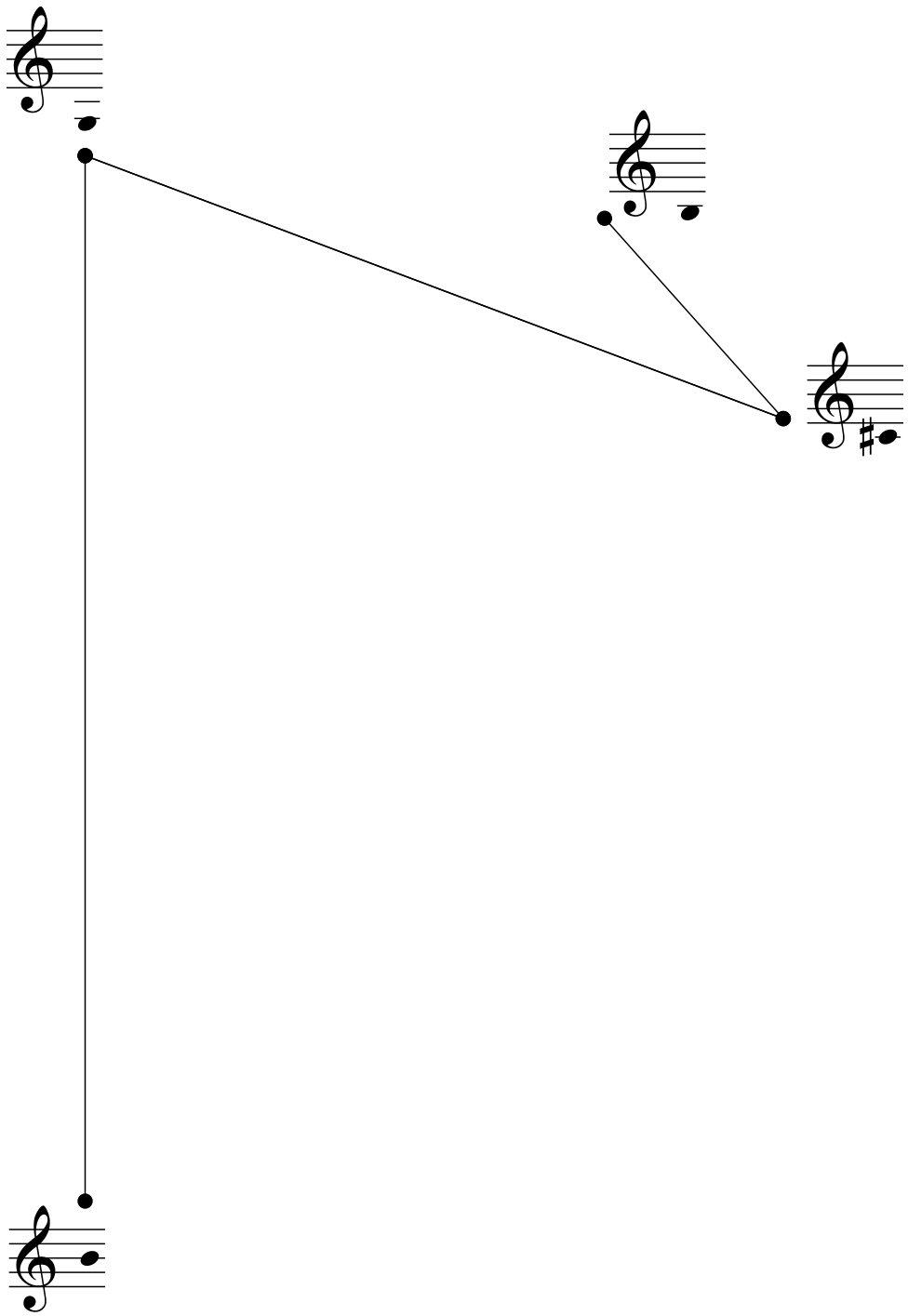


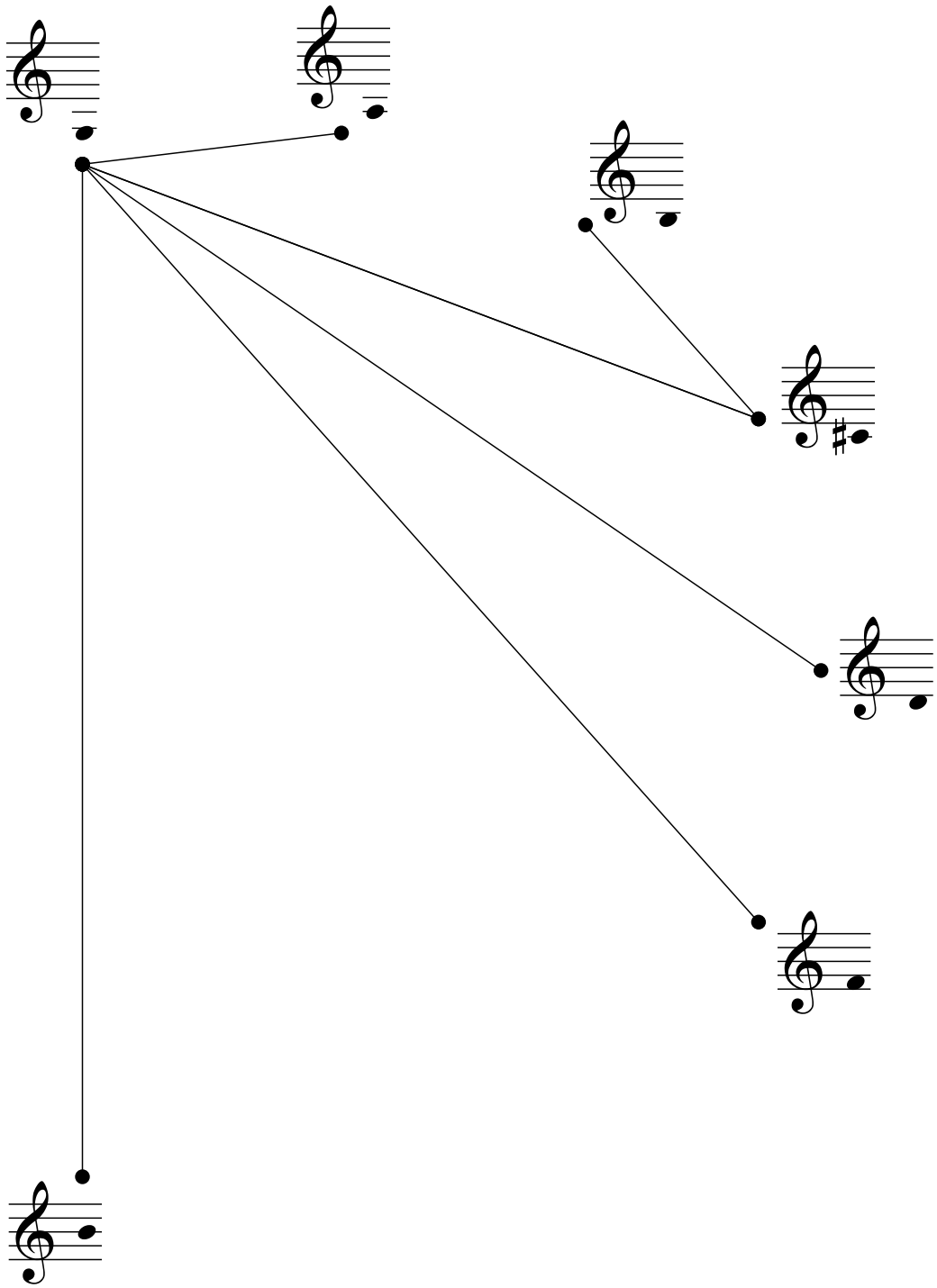
towards completeness

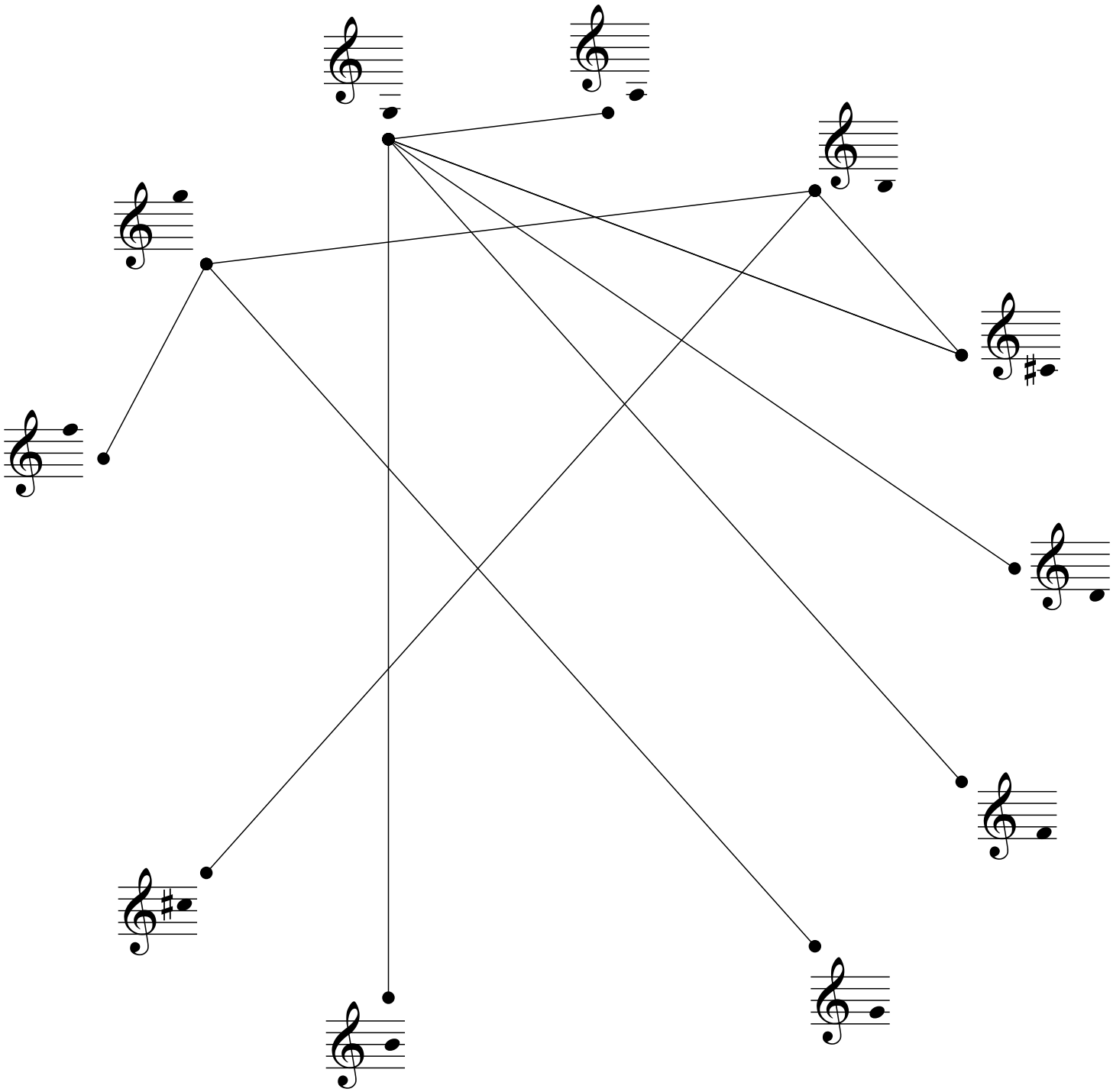
score realization 2
sections 3 - 14

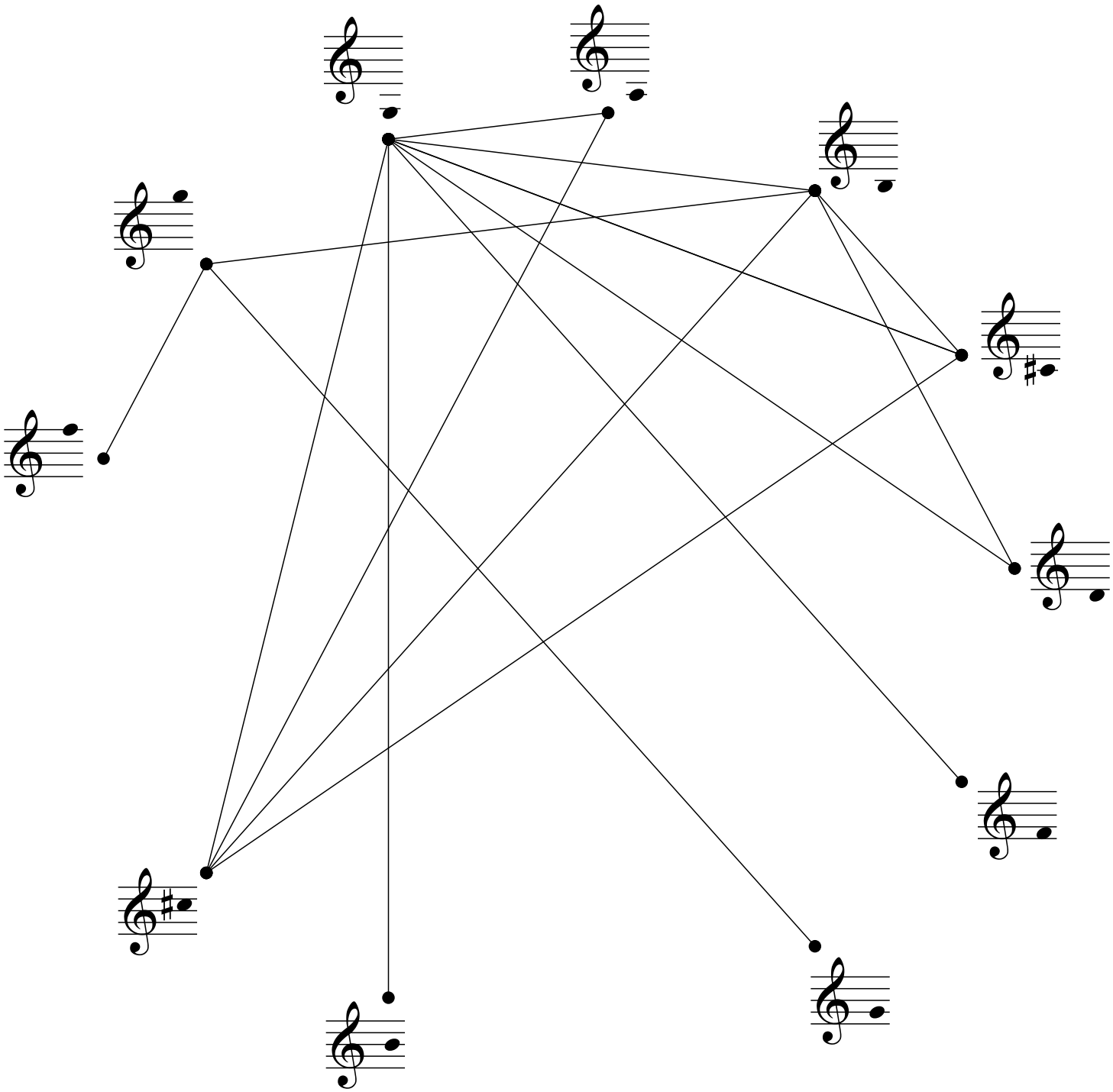
mike winter (2008)

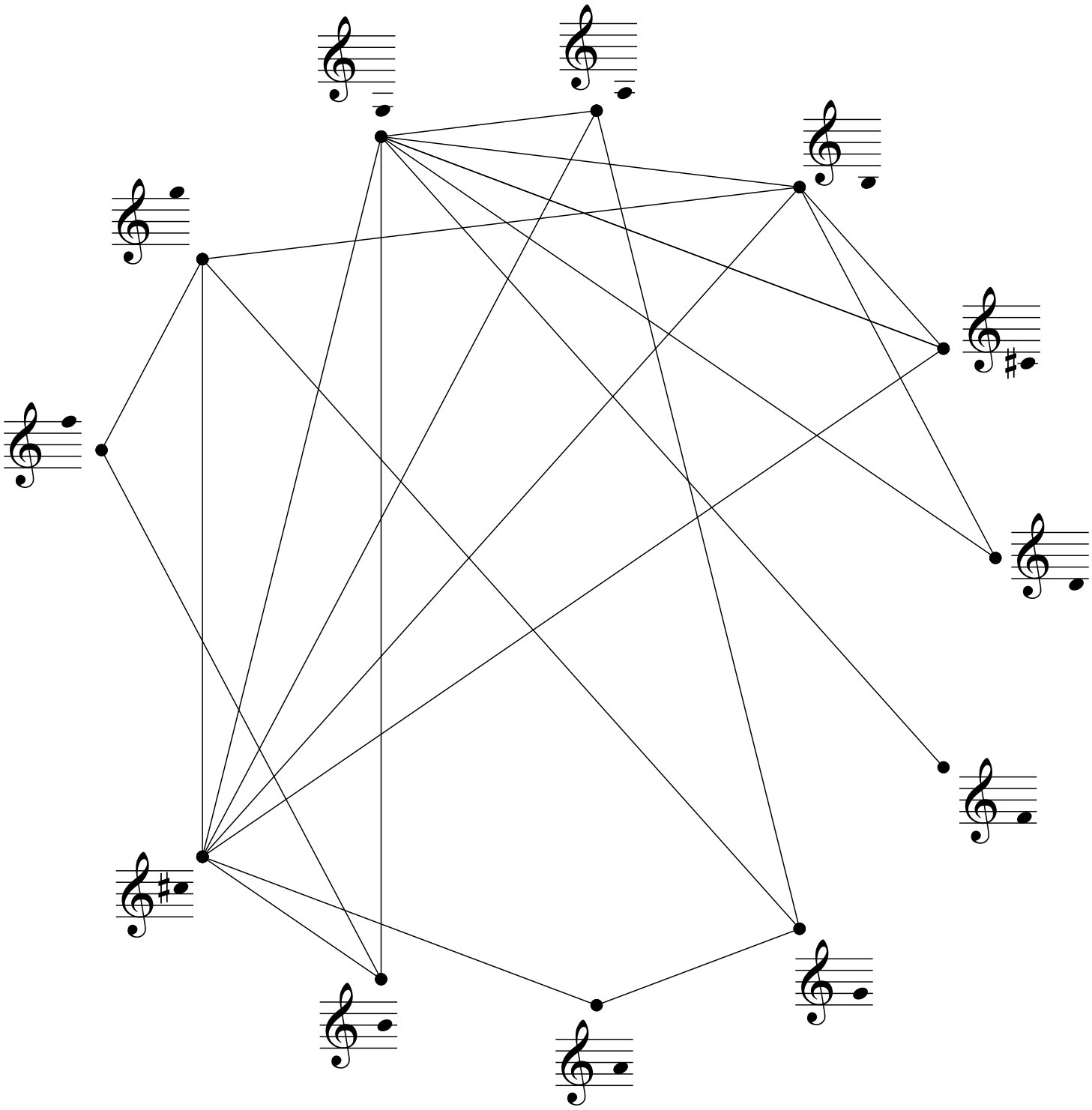


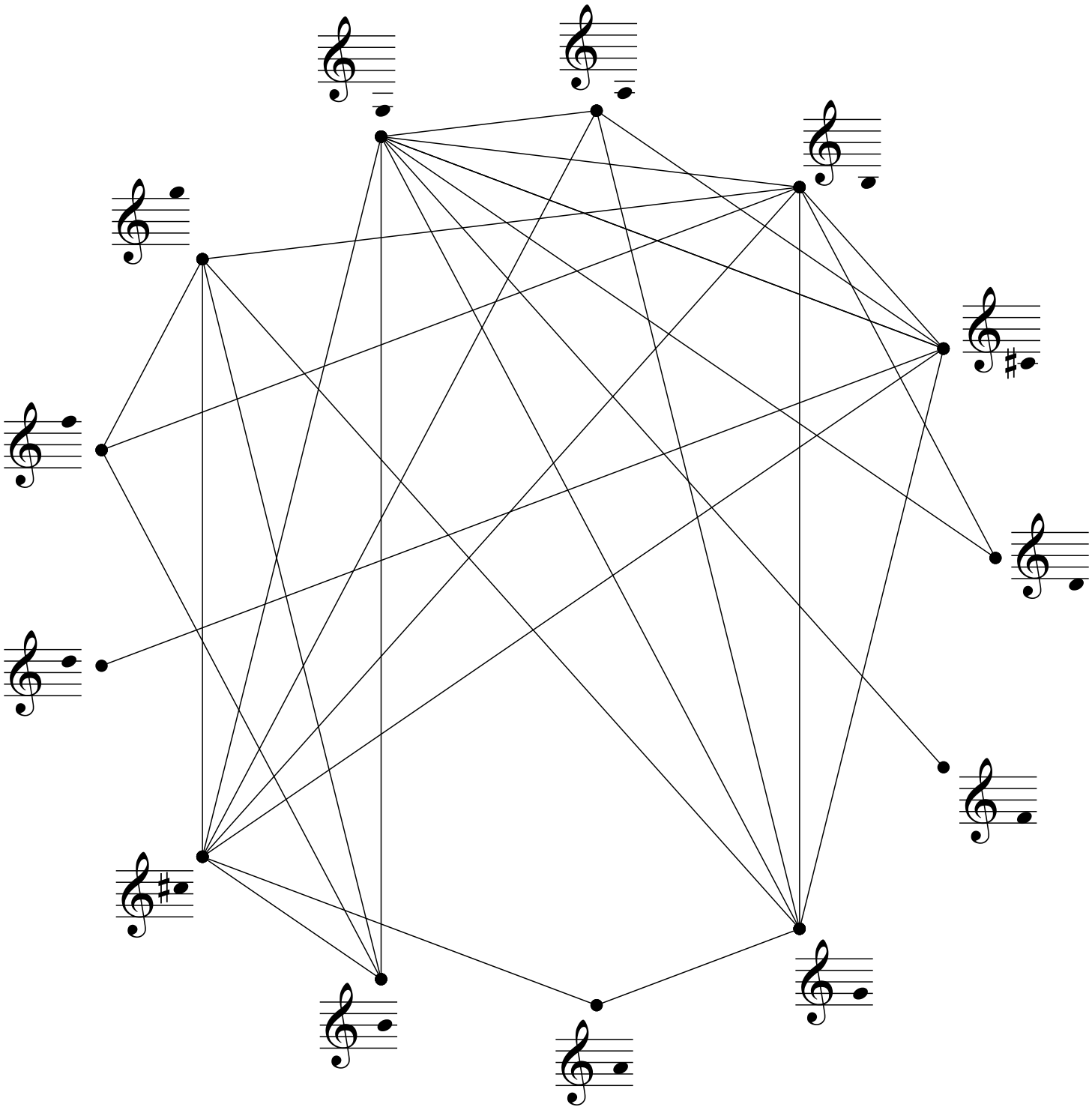


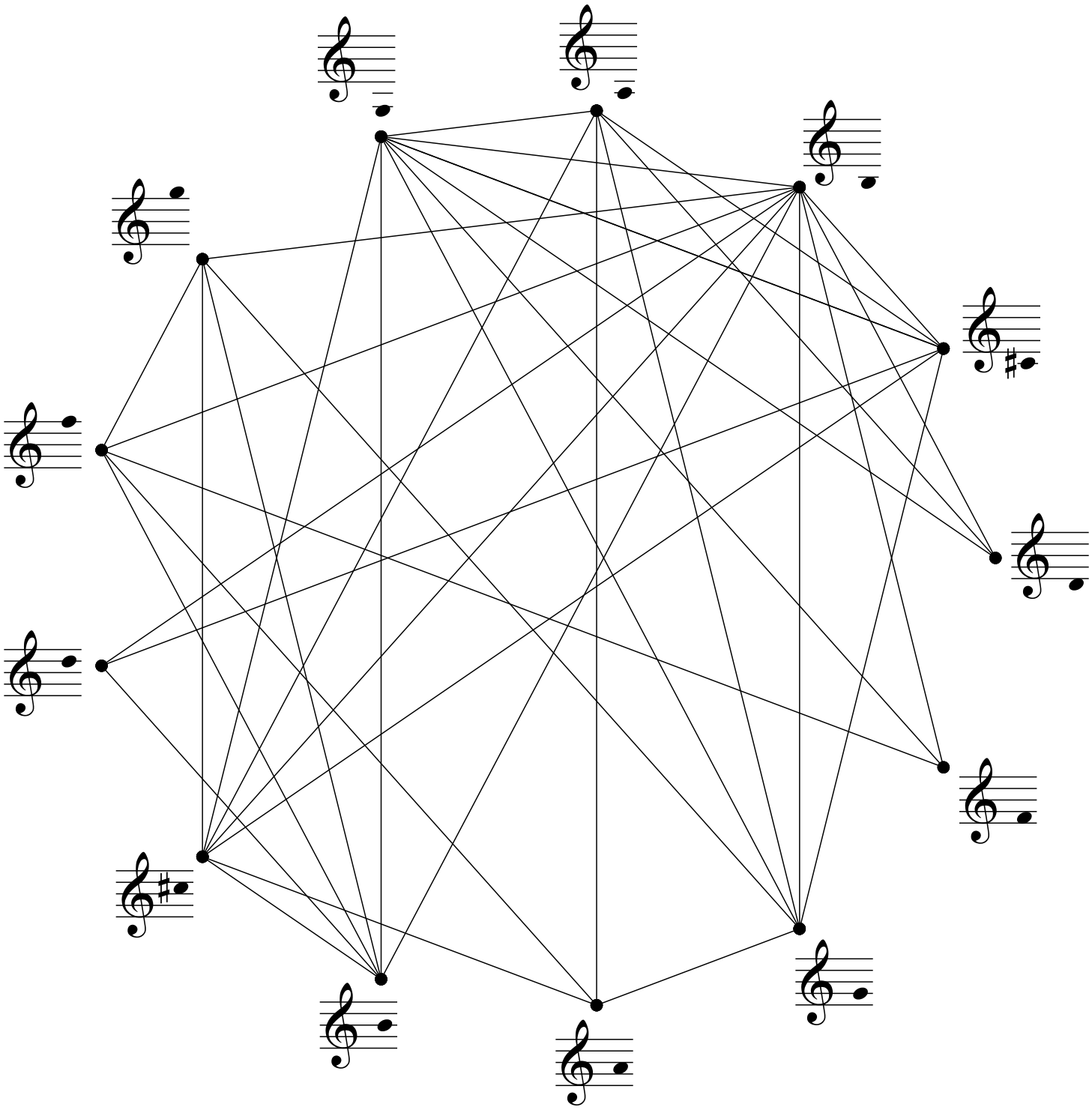


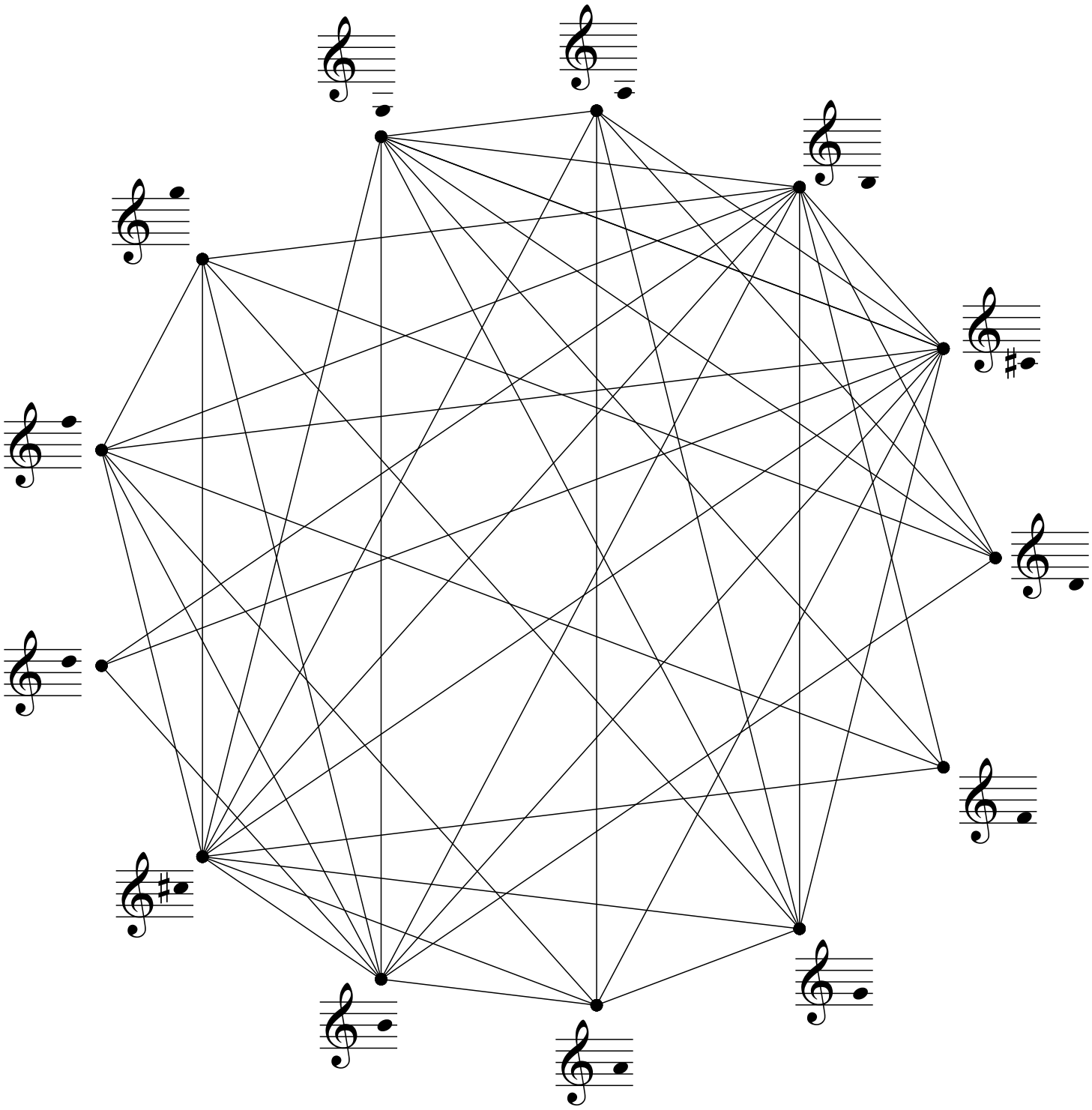


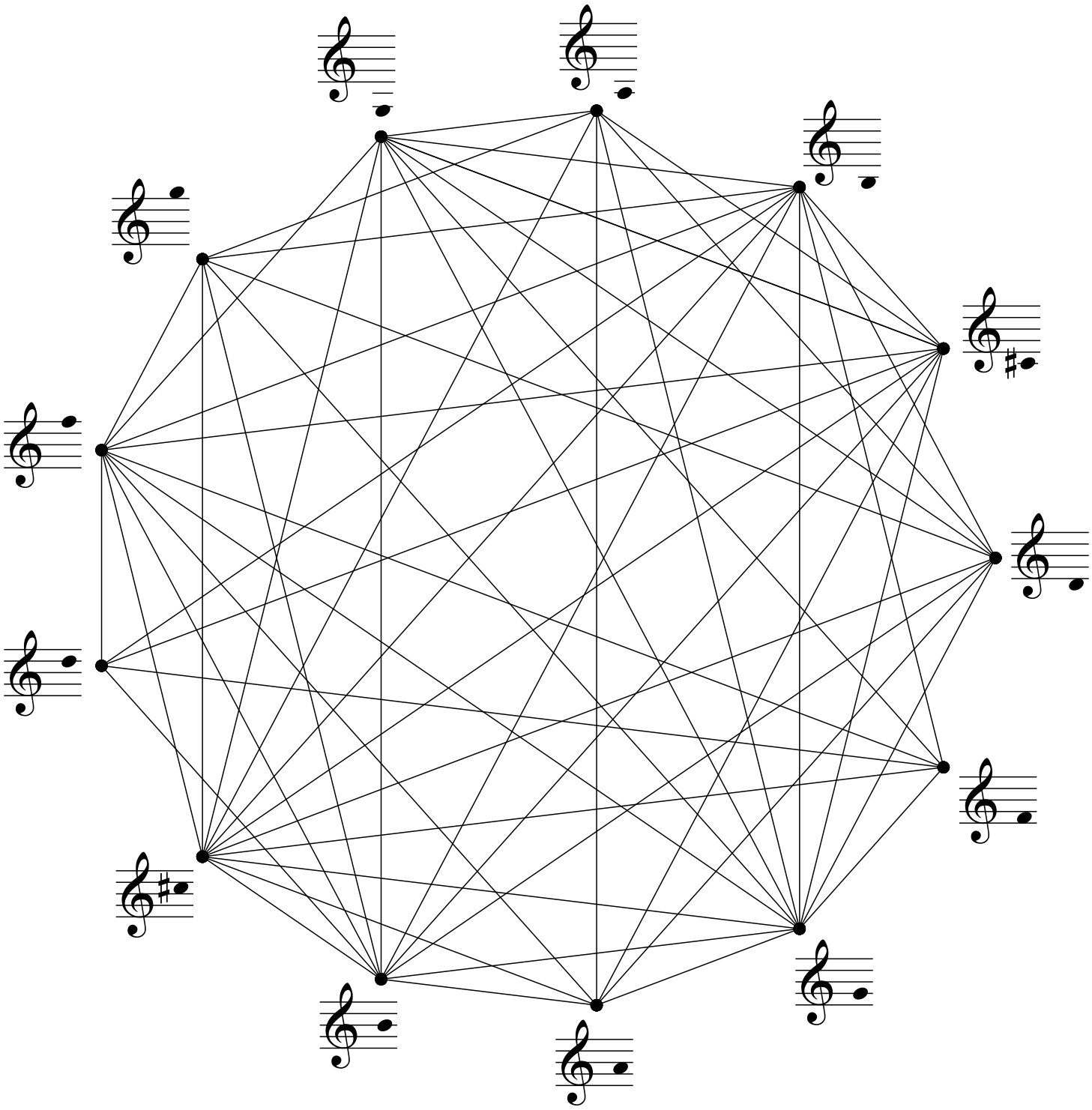


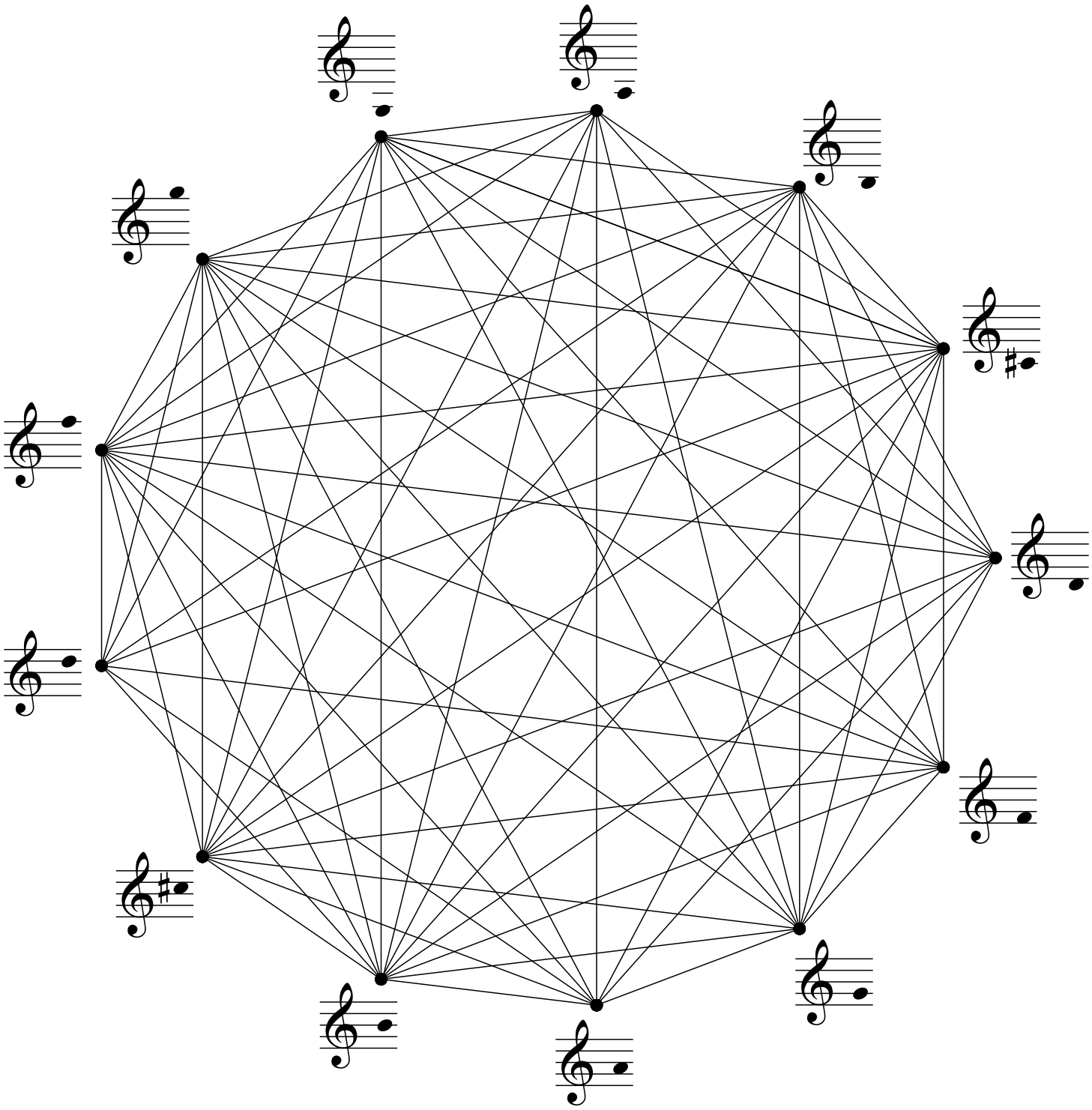


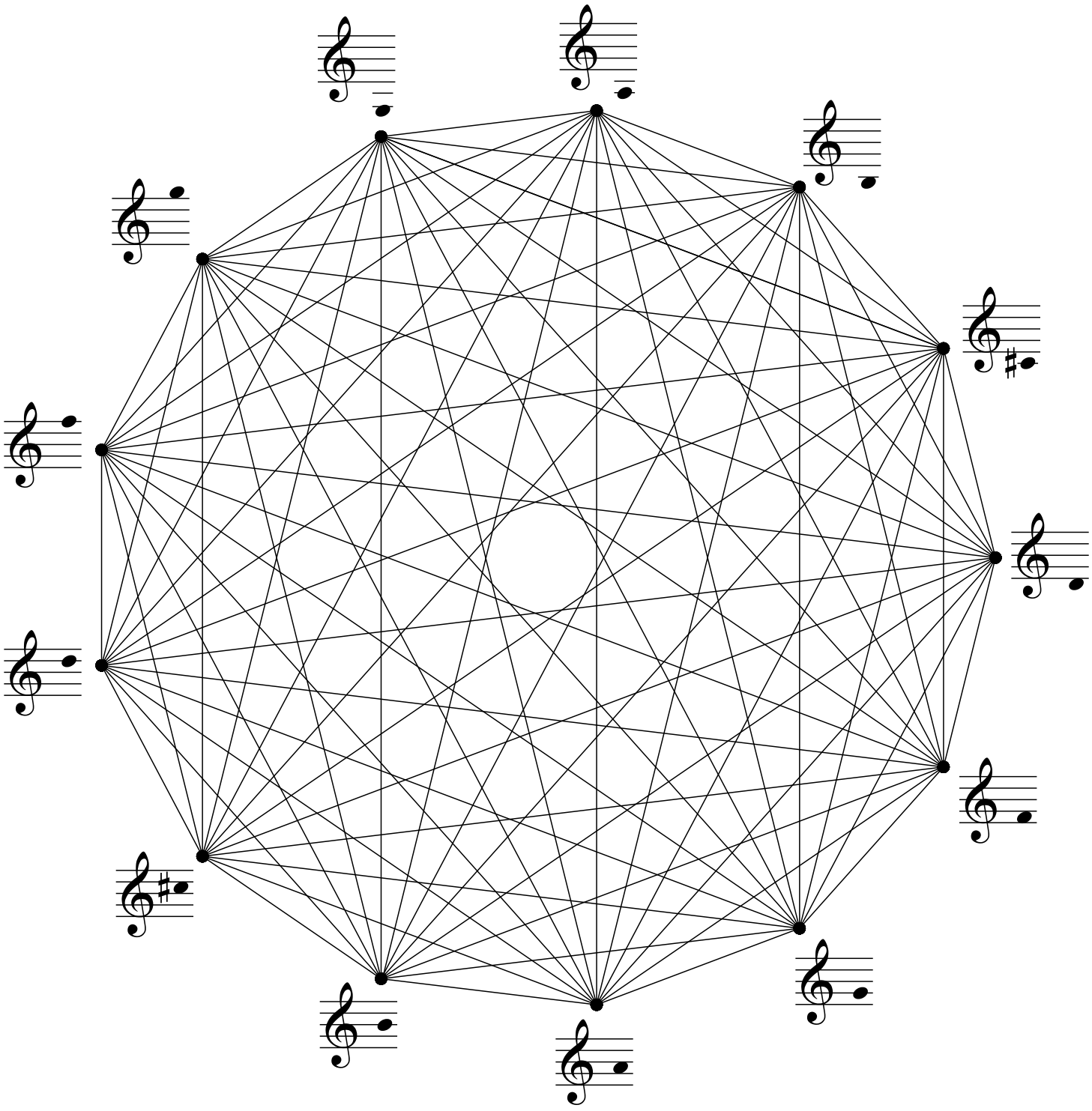








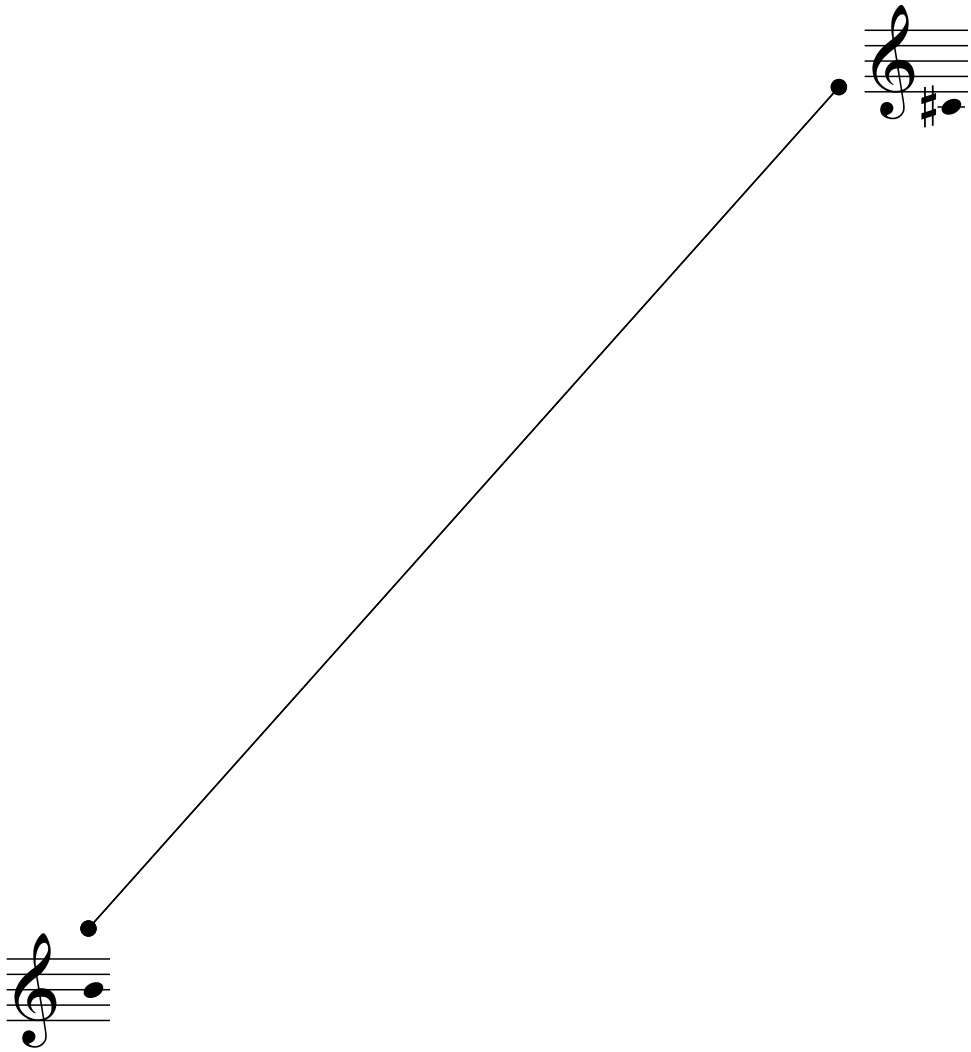


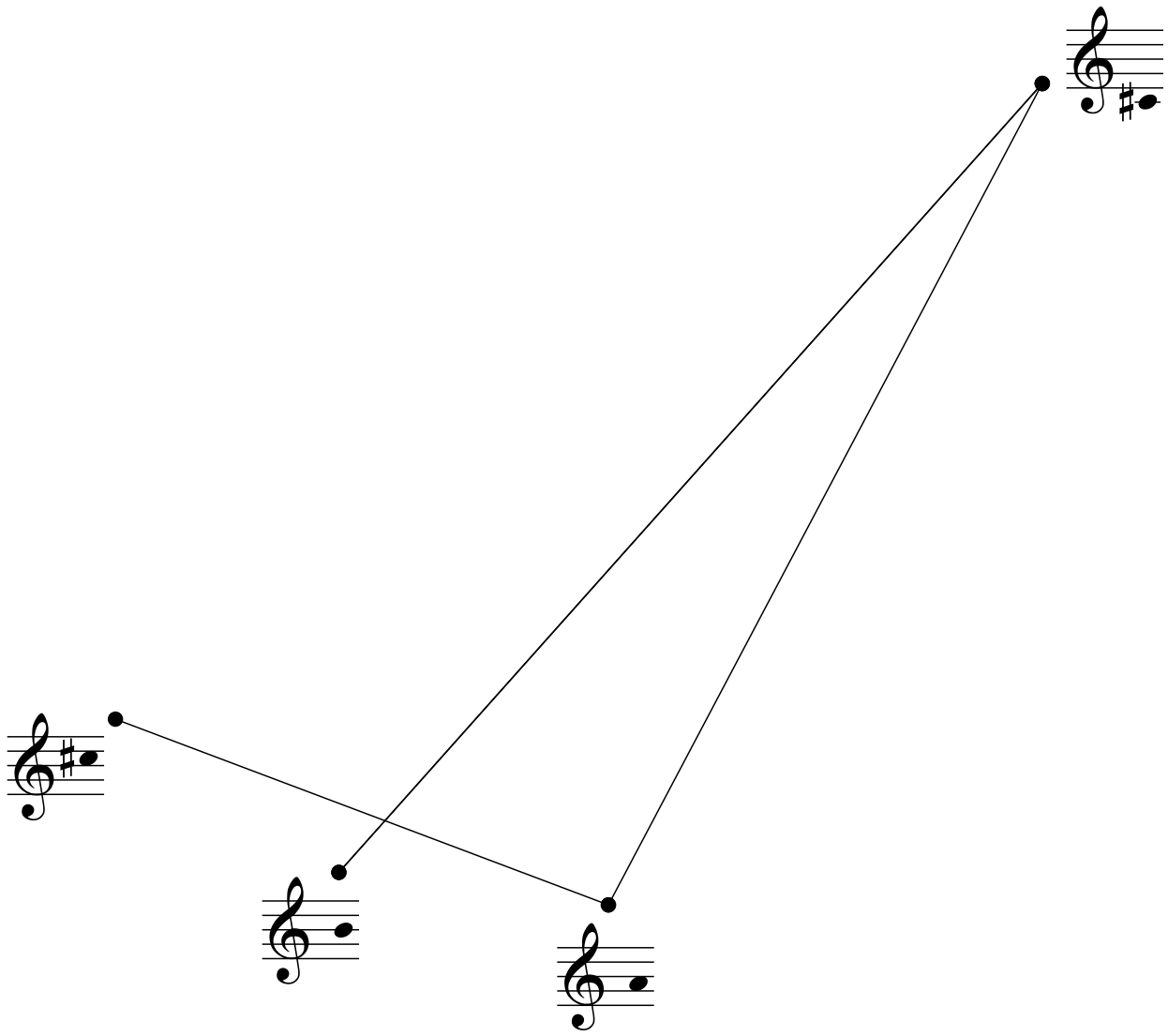


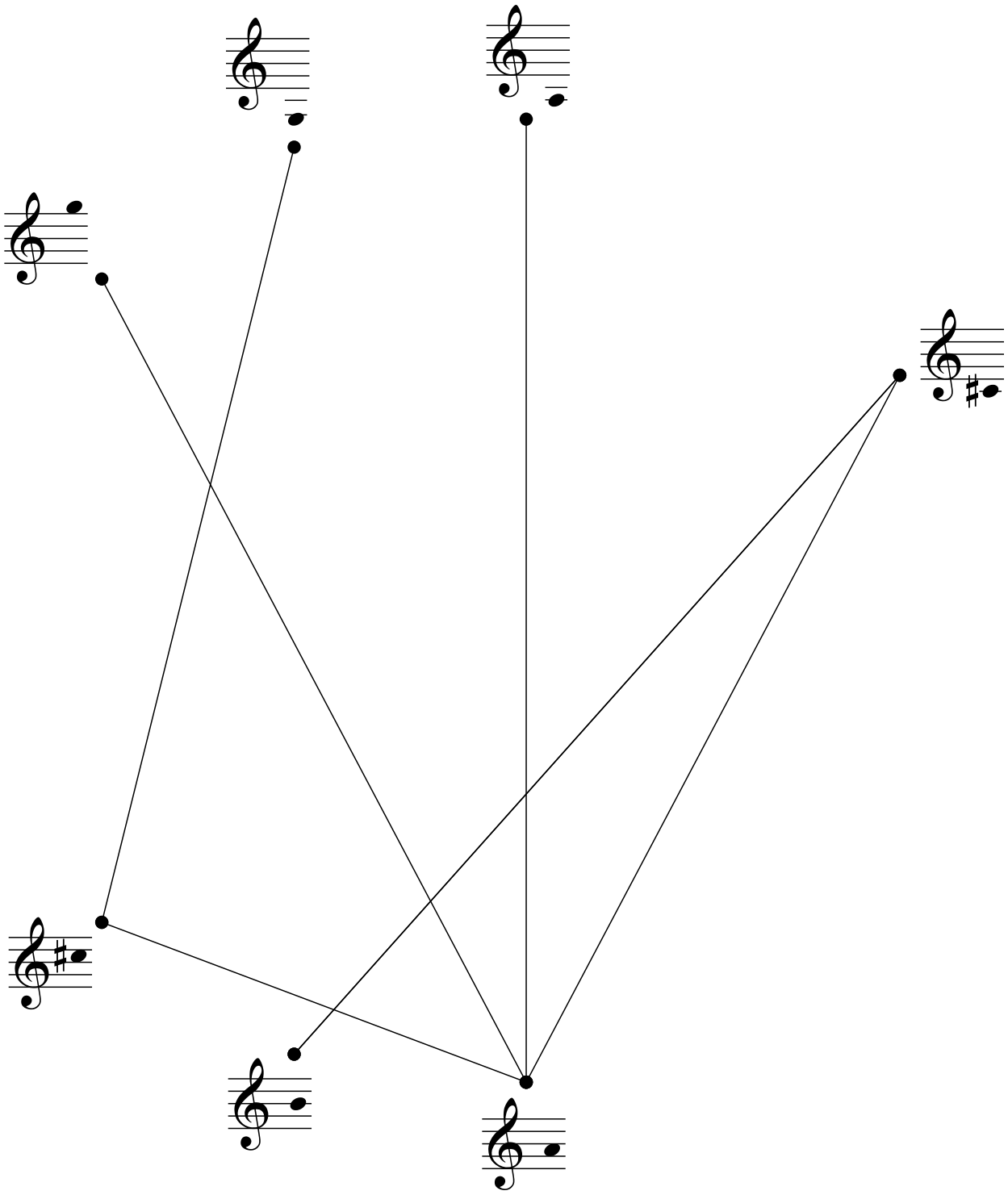
towards completeness

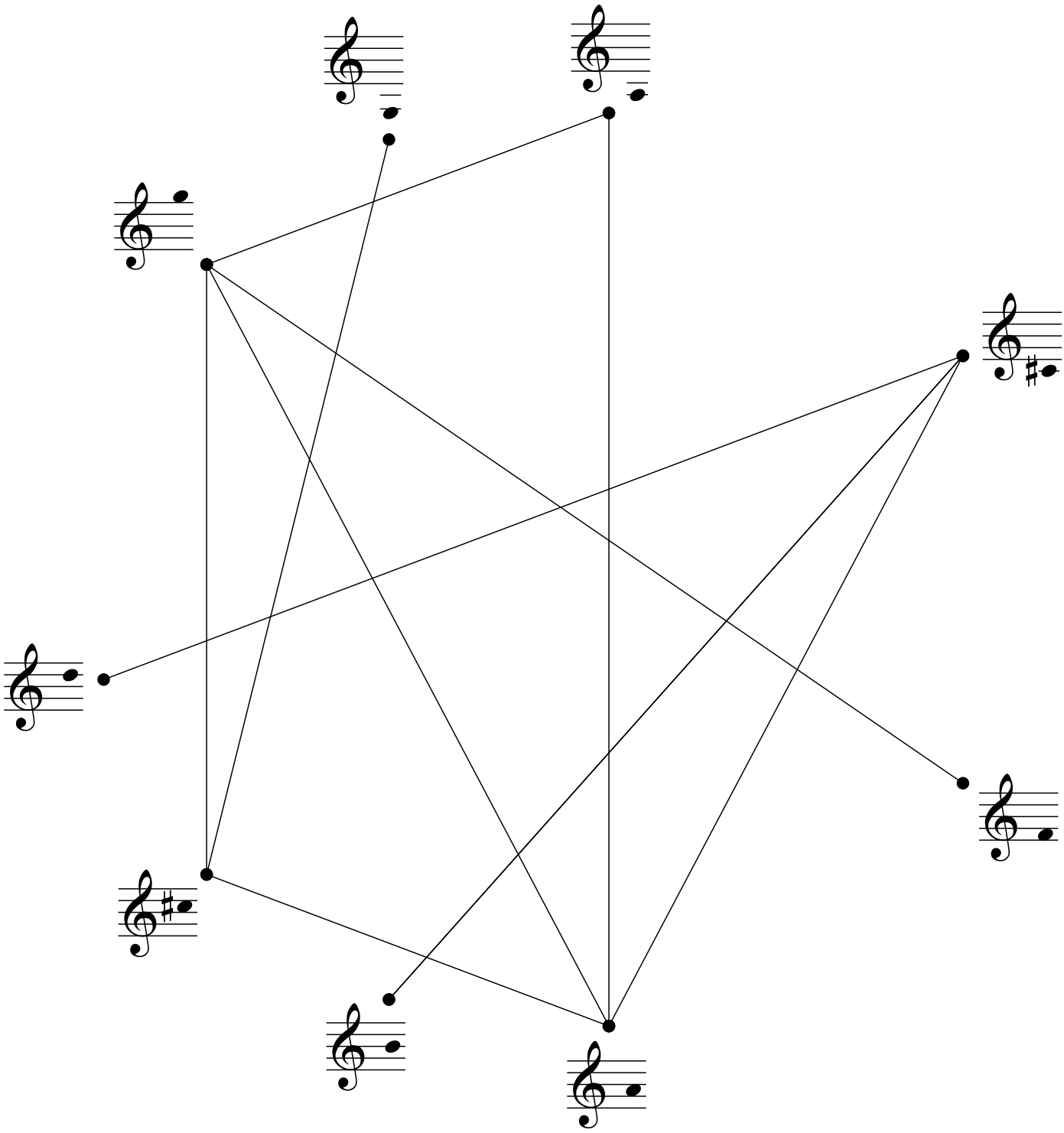
score realization 3
sections 3 - 14

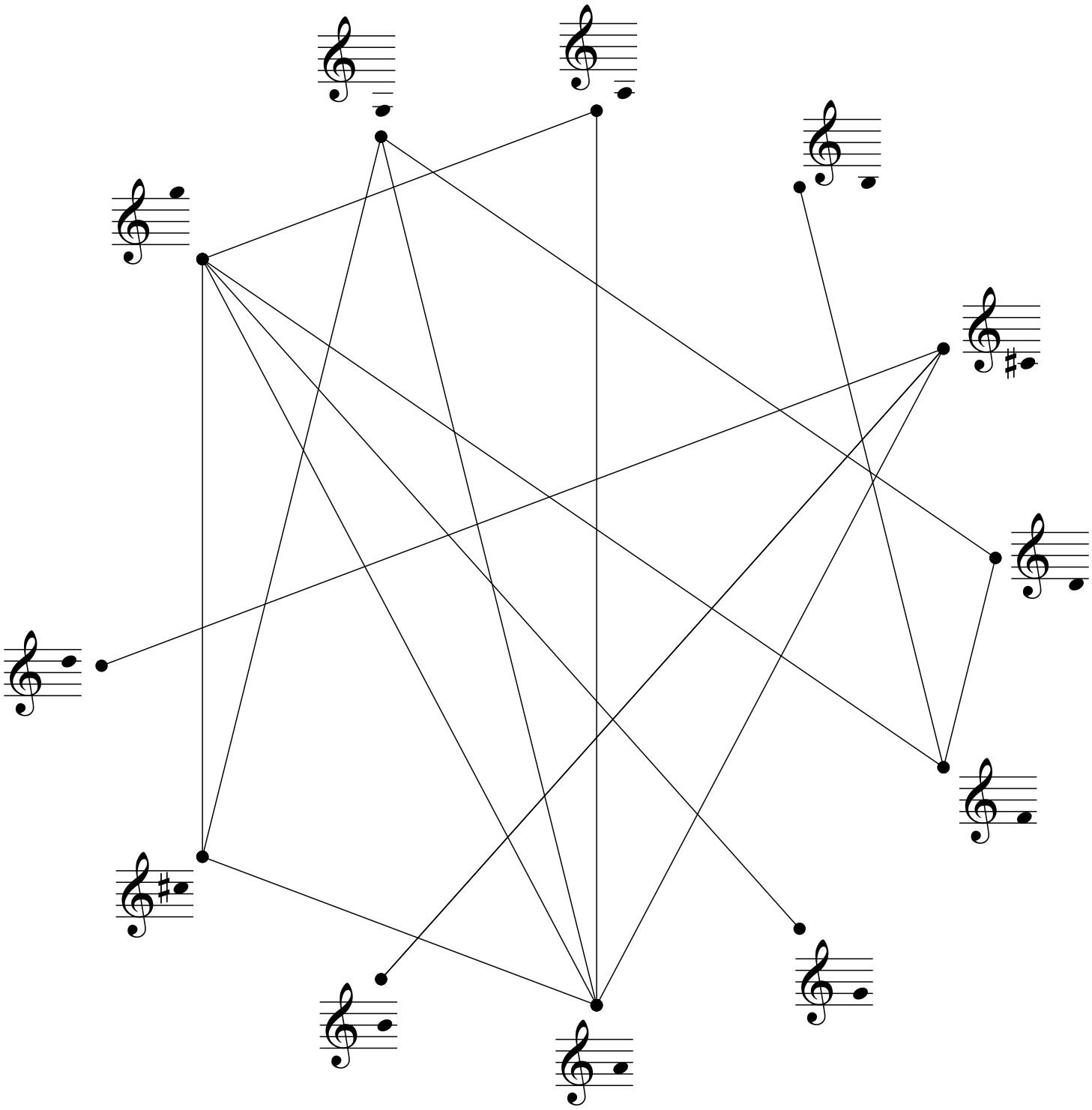
mike winter (2008)

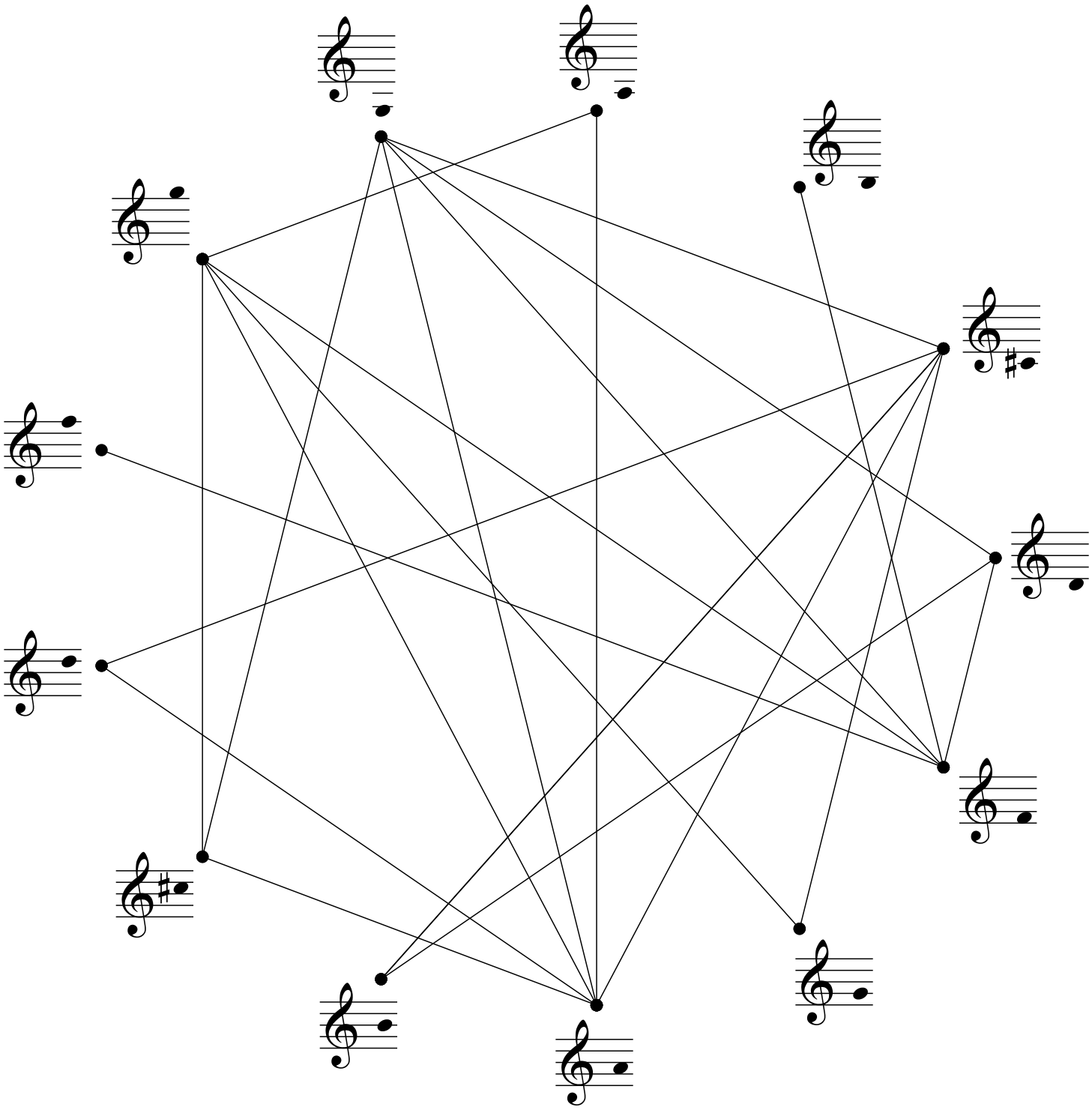


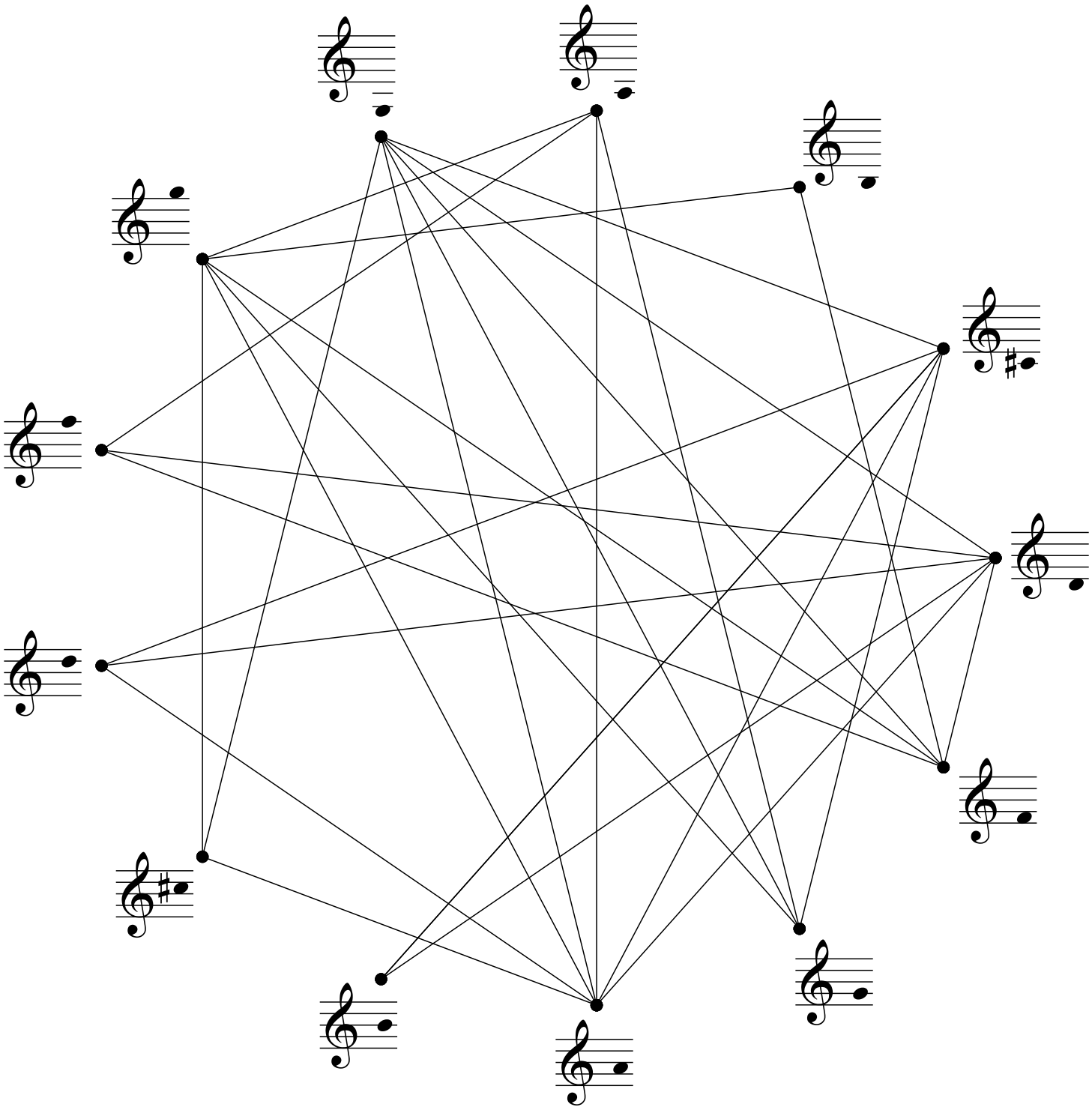


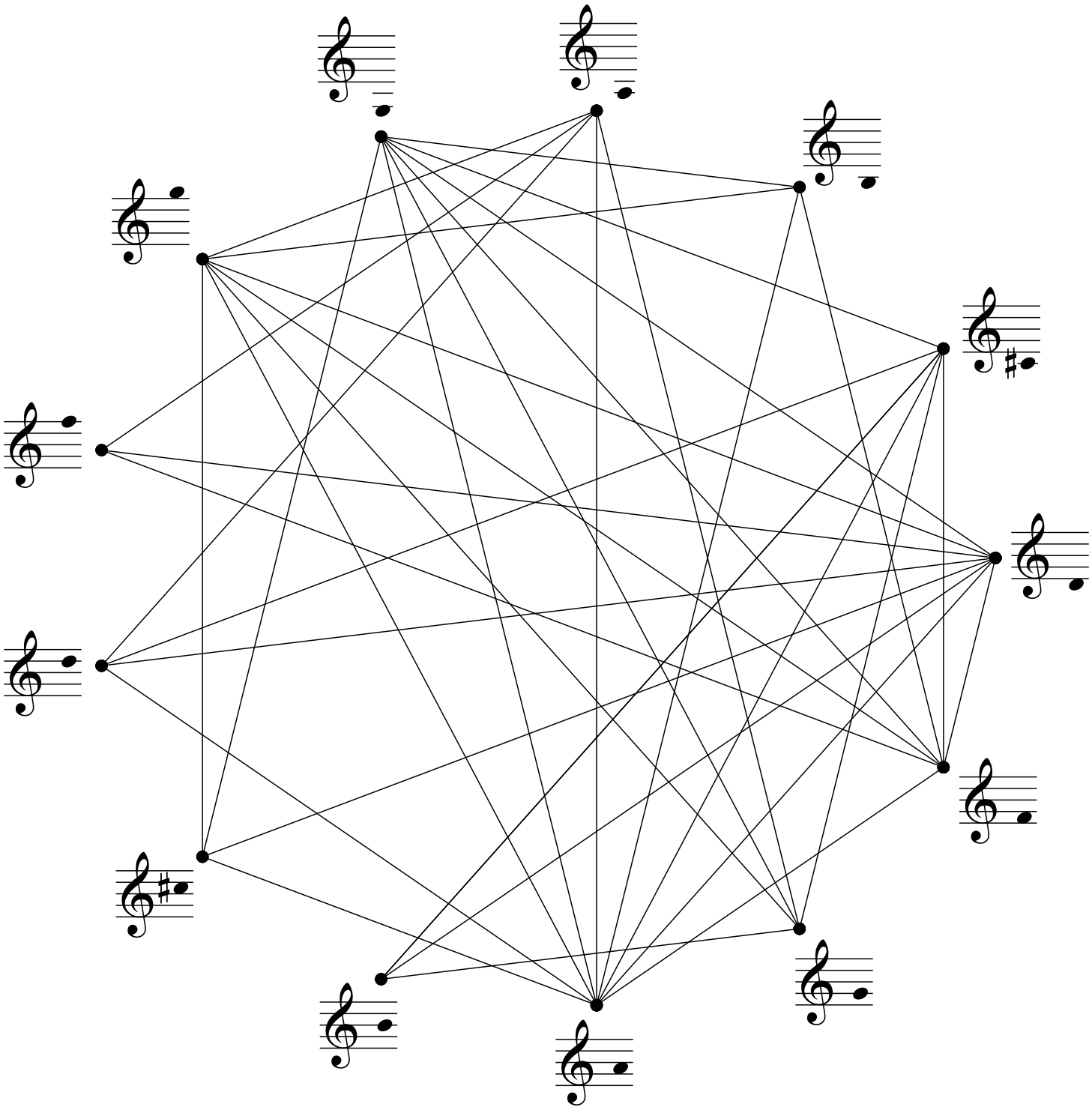


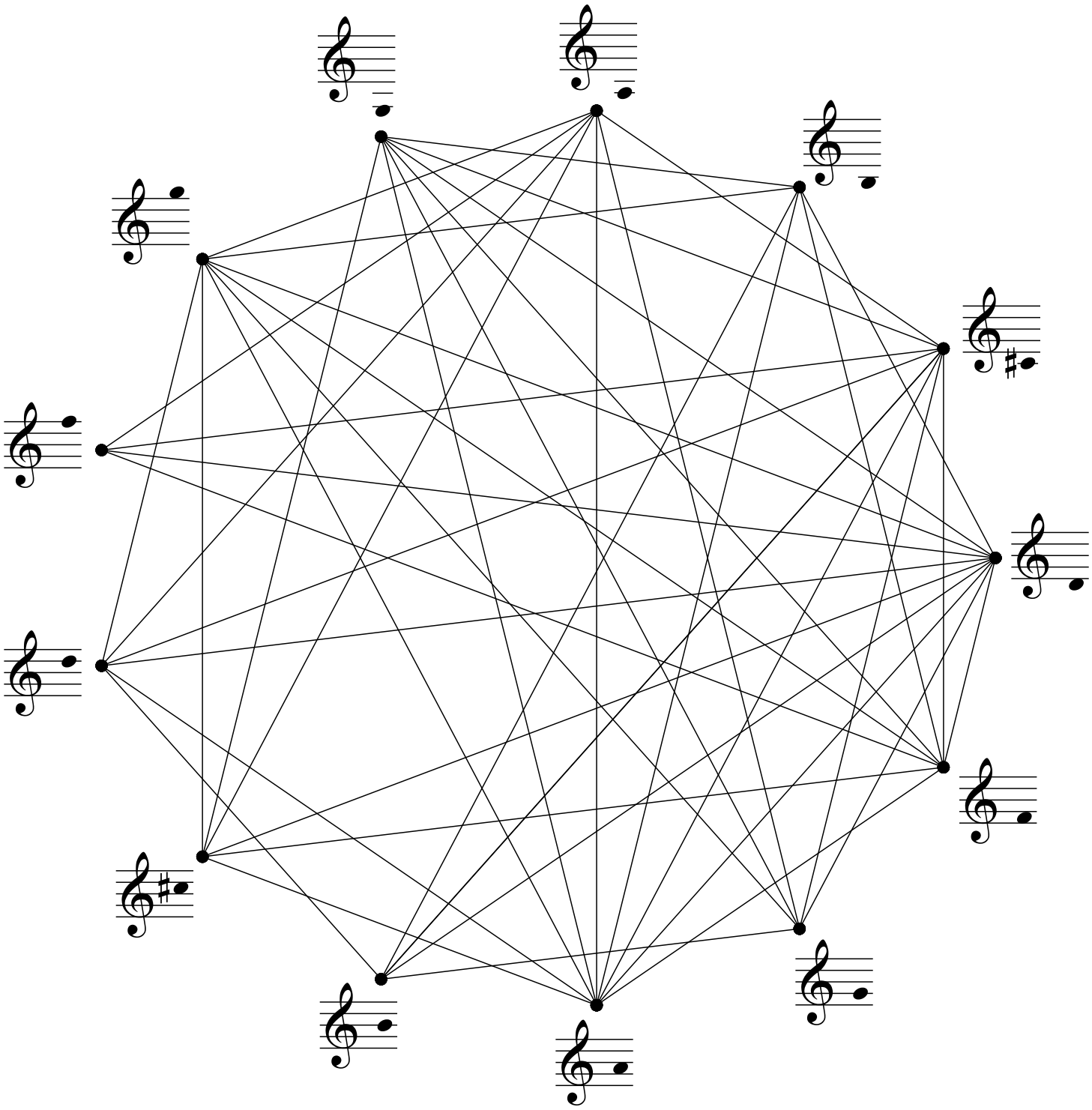


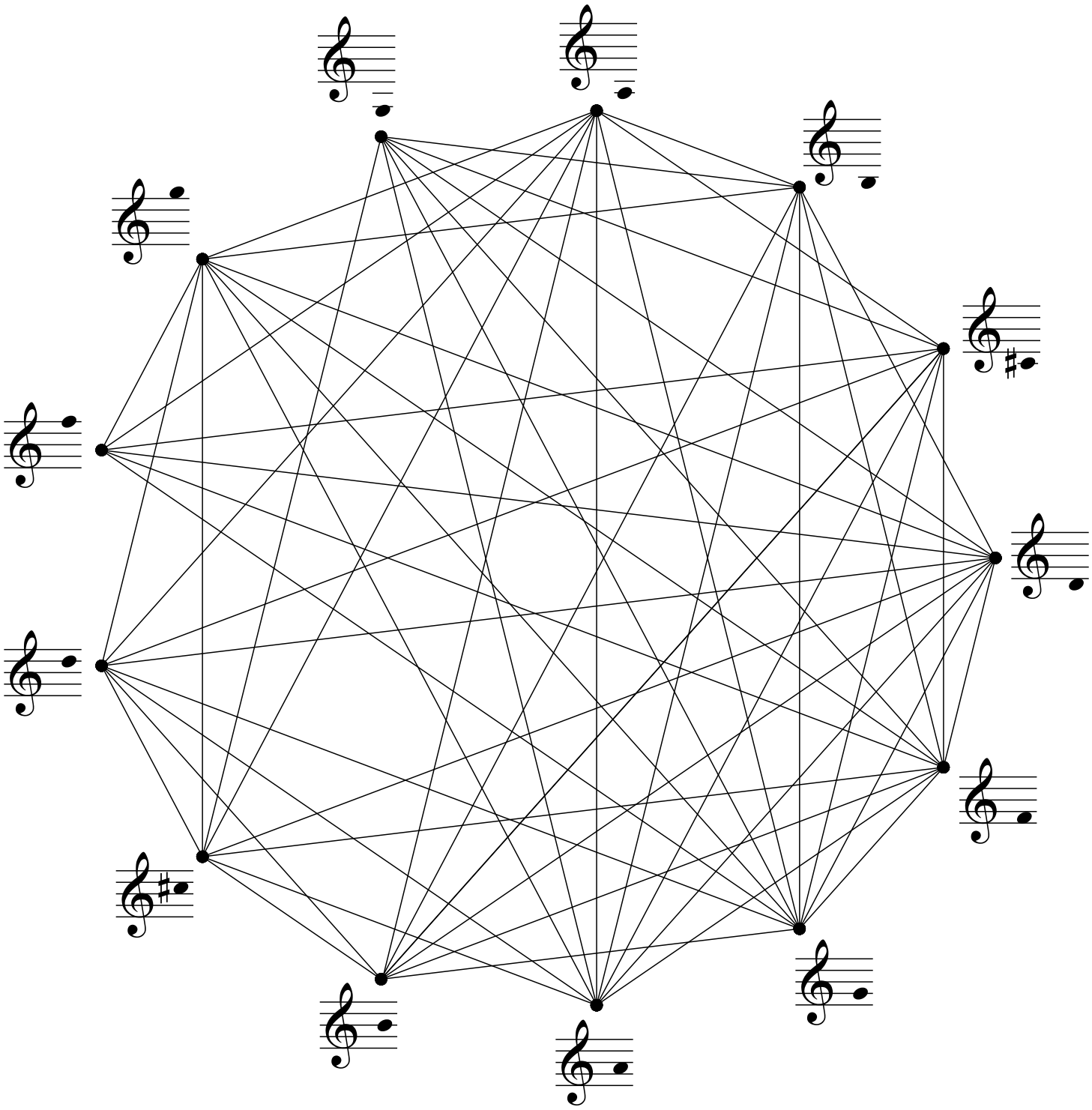


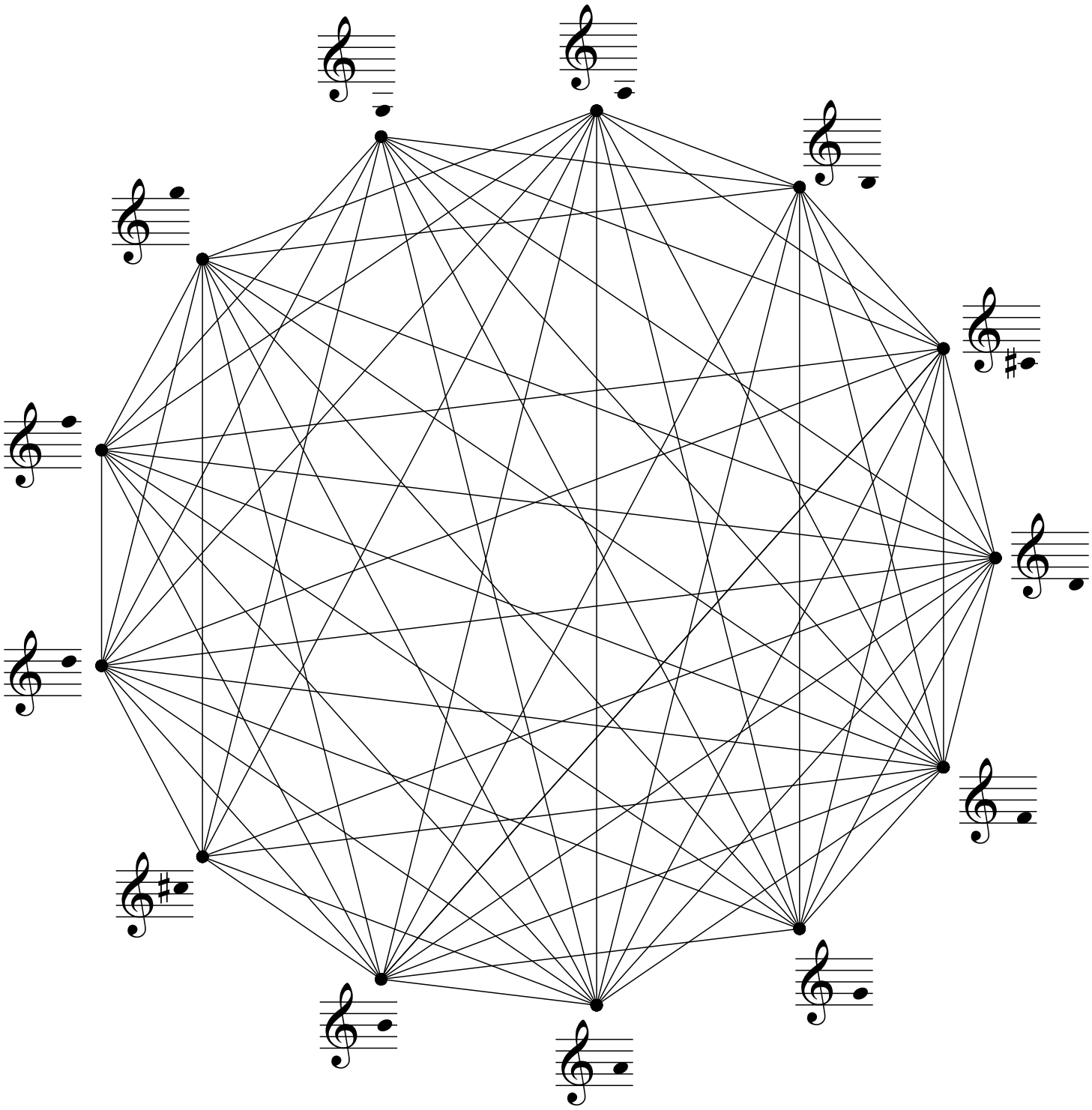


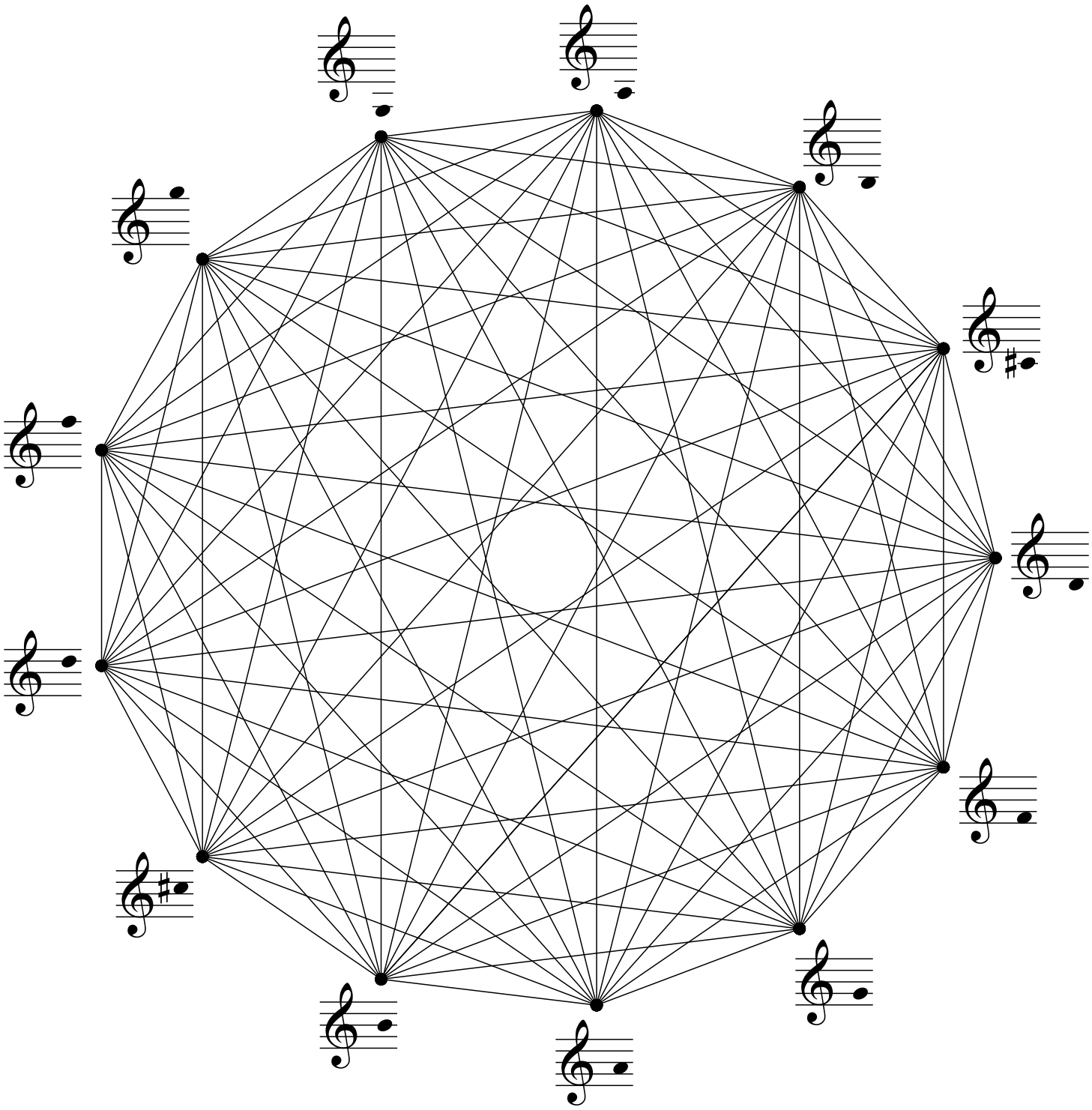








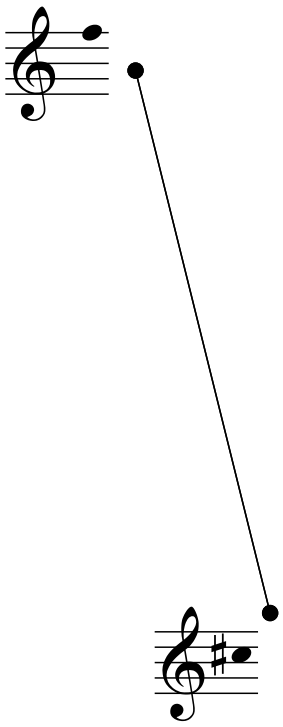


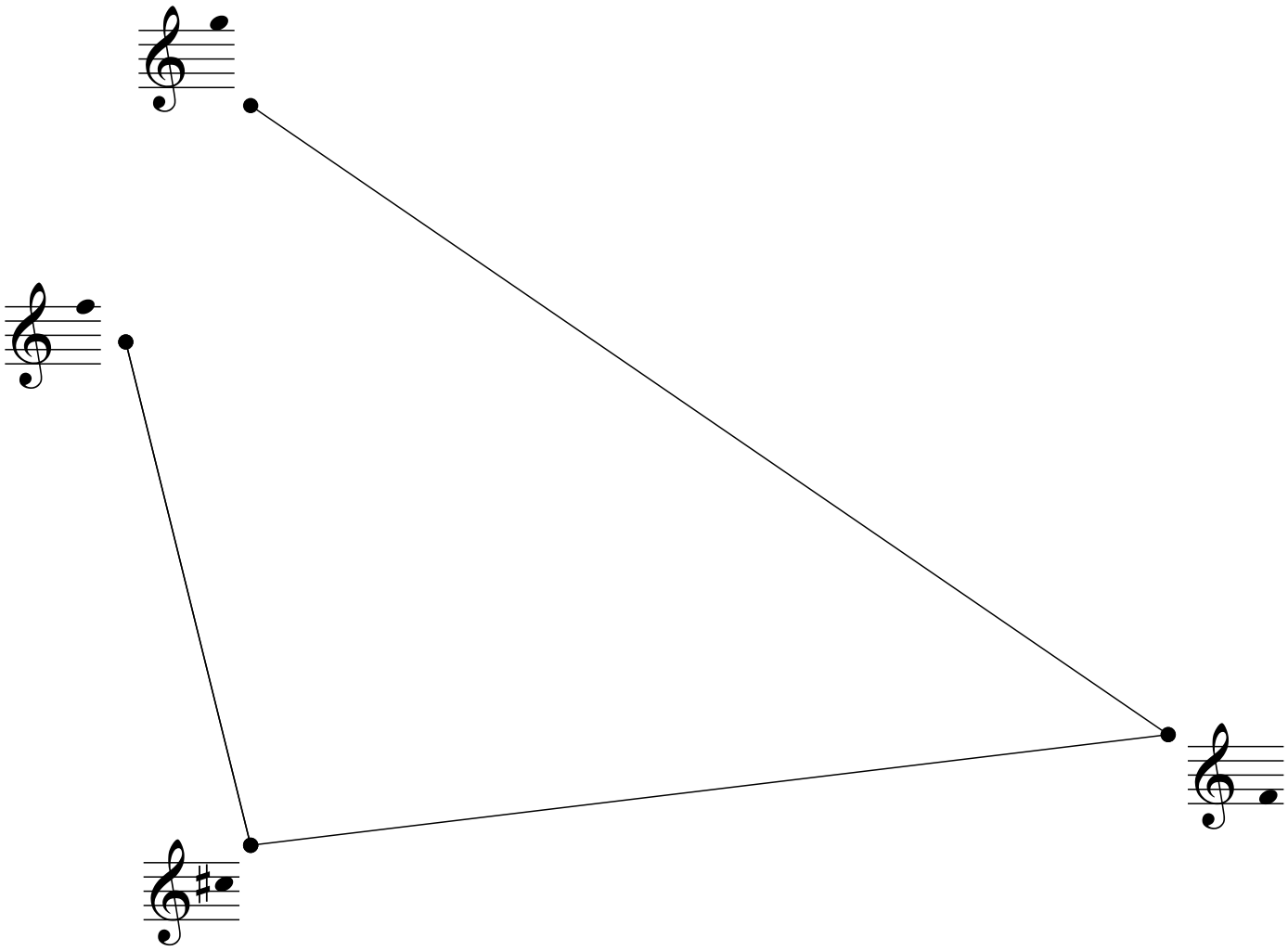


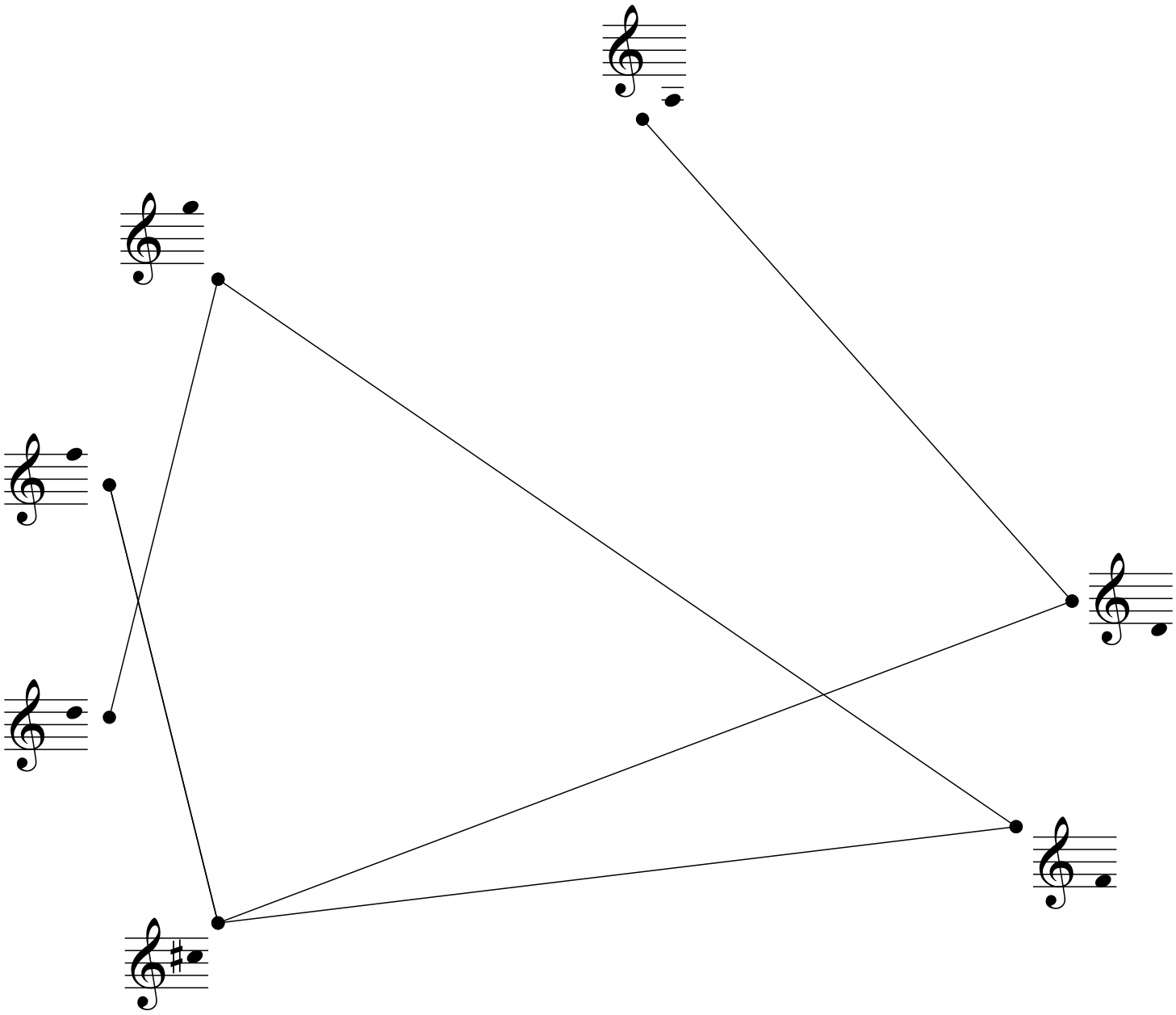
towards completeness

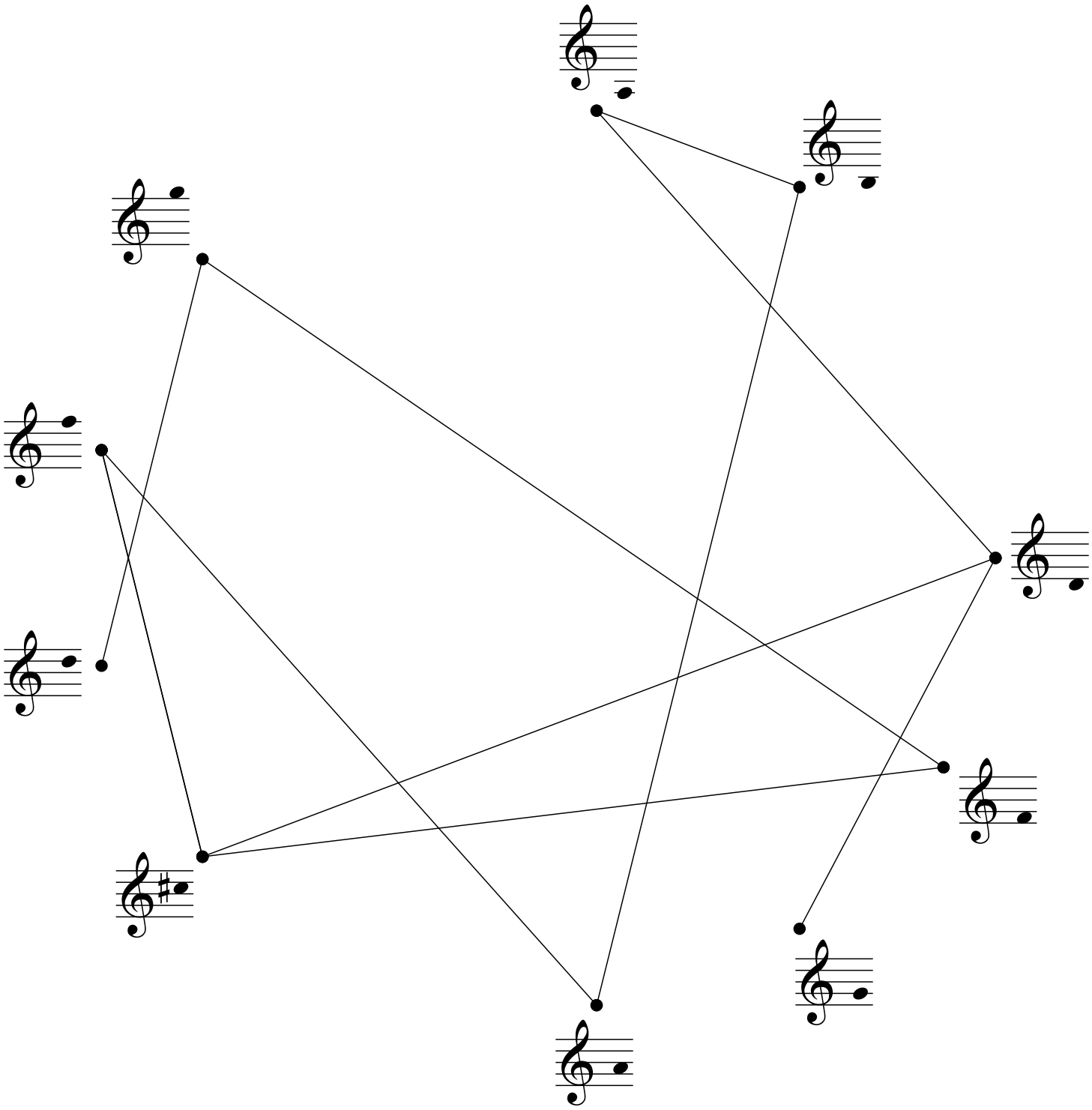
score realization 4
sections 3 - 14

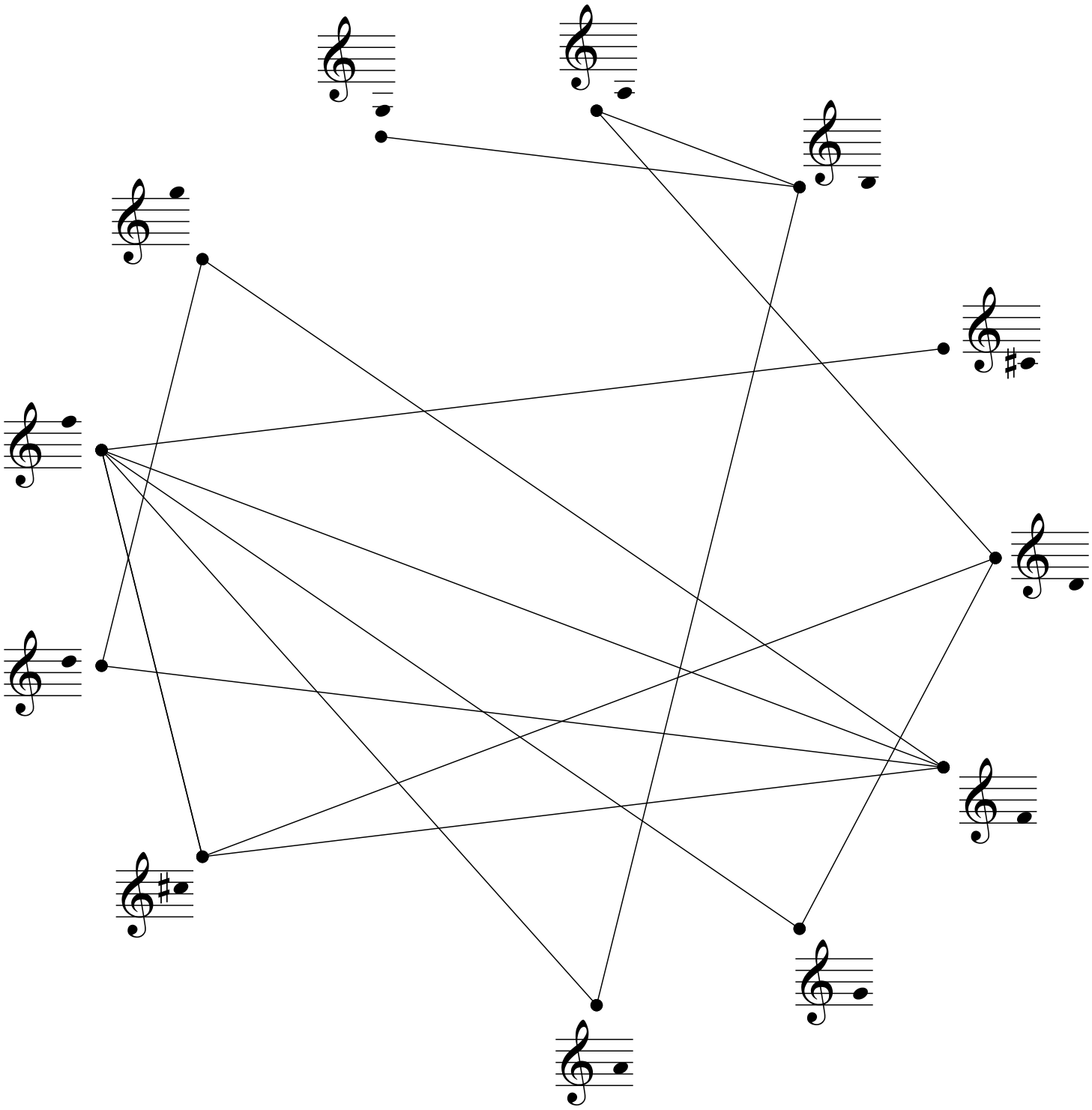
mike winter (2008)

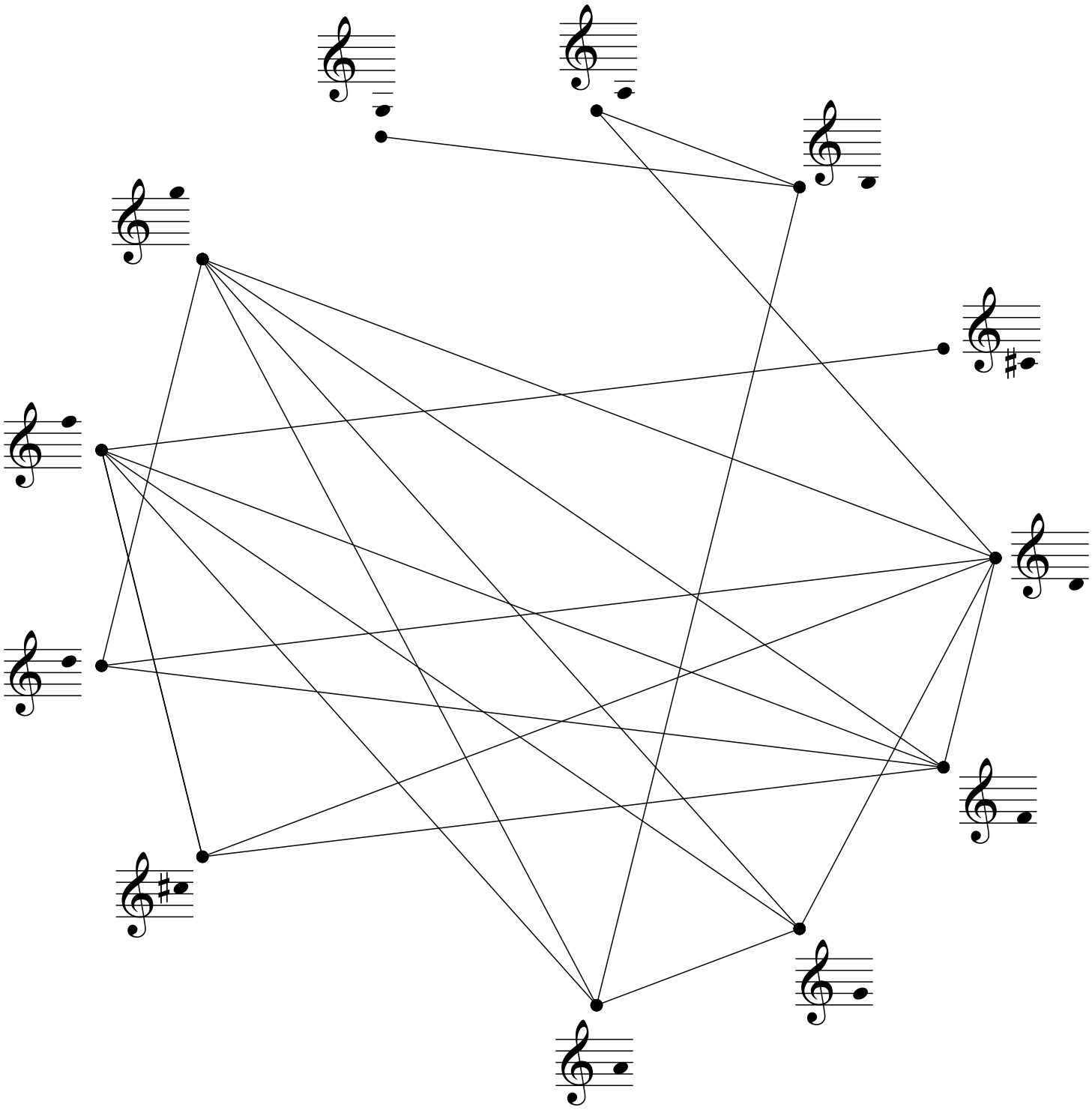


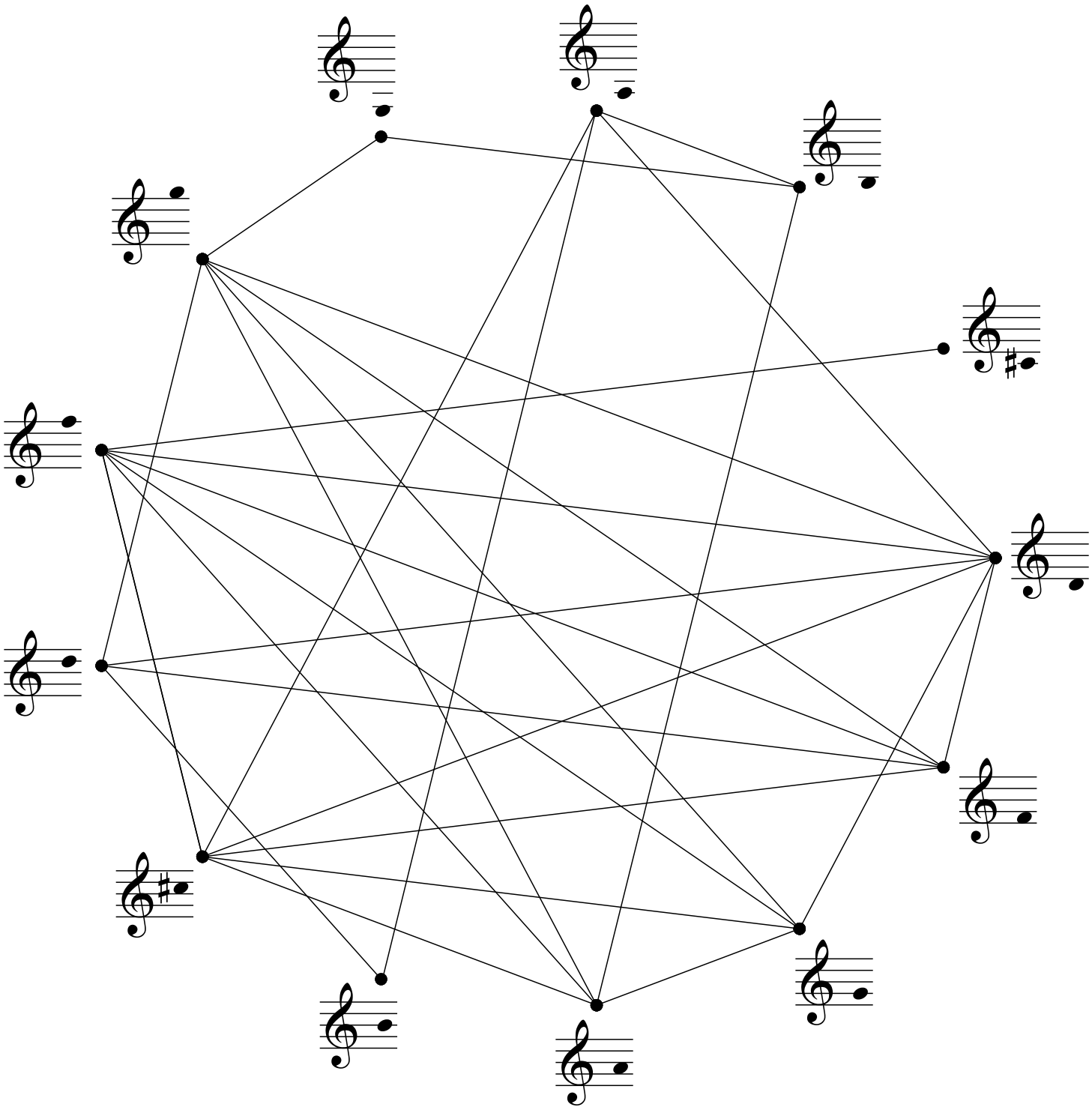


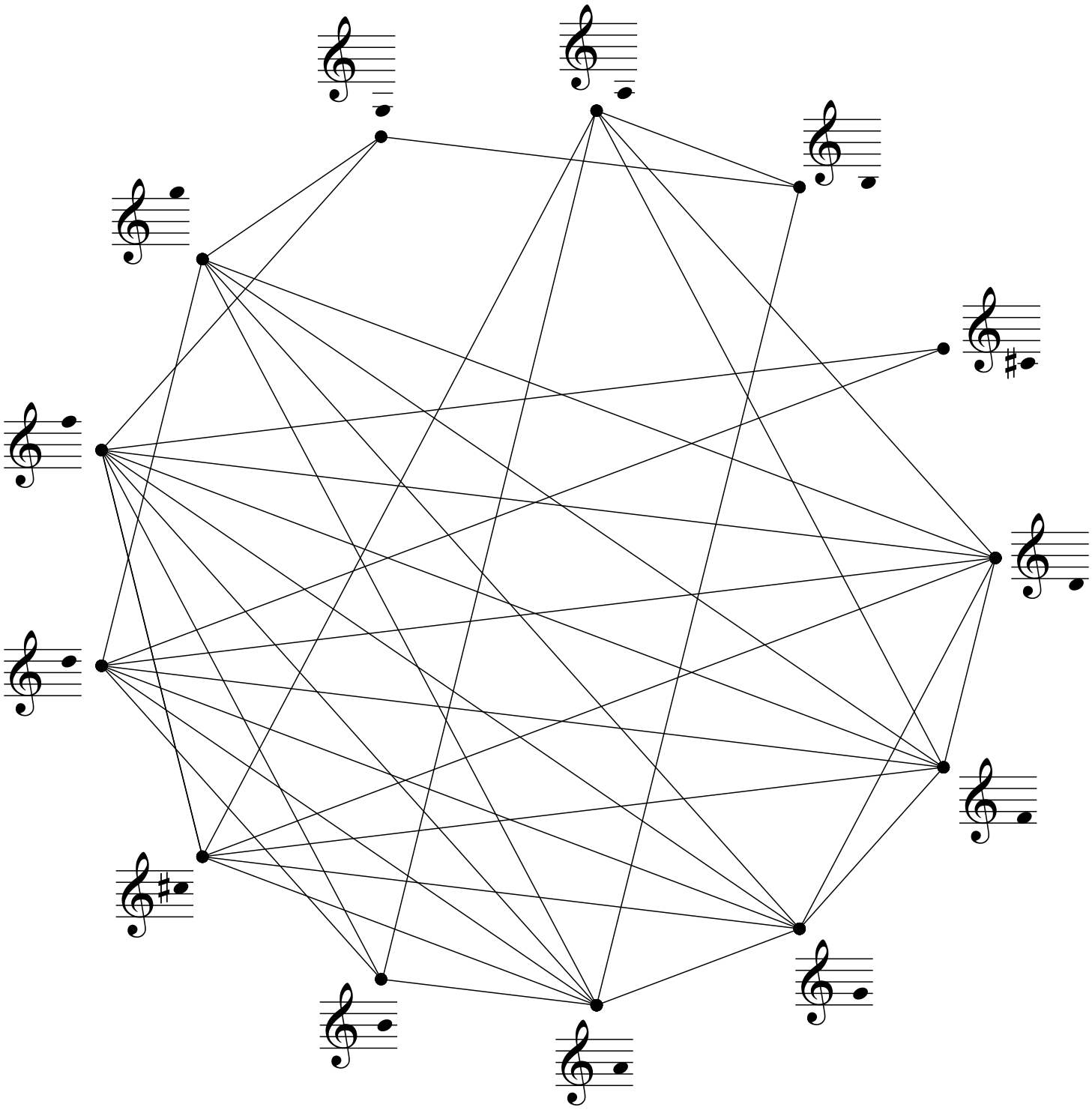


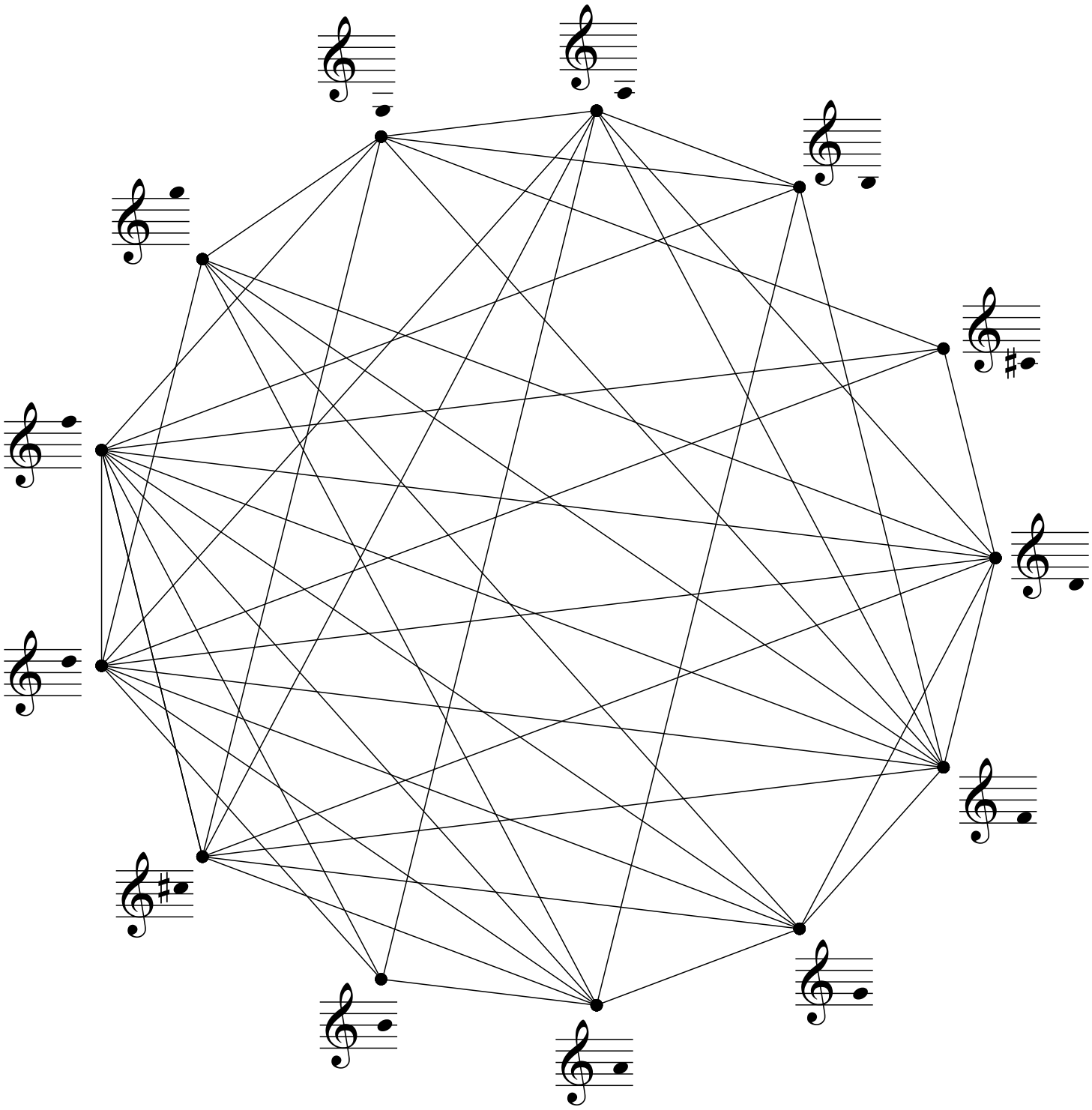


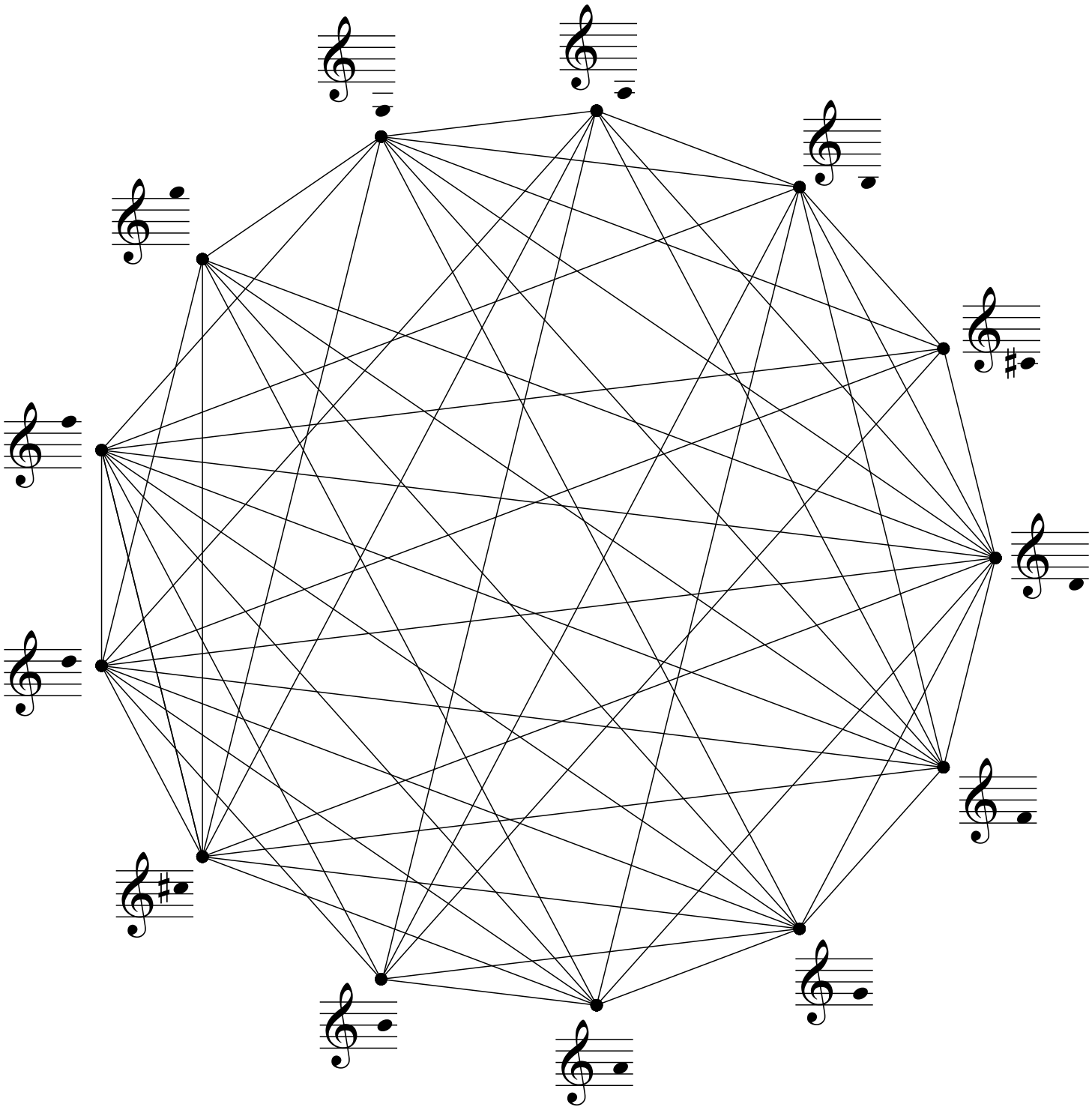


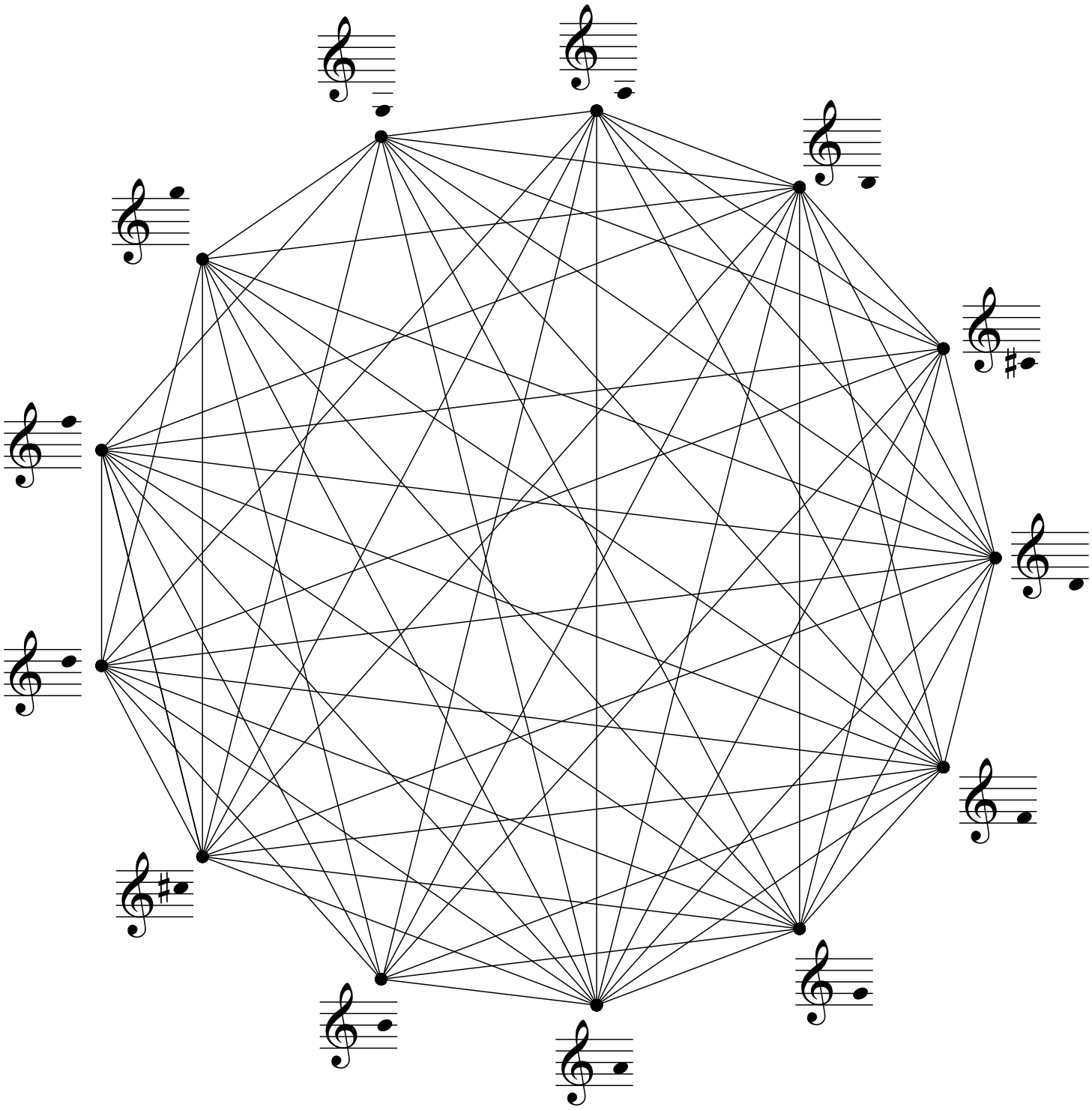


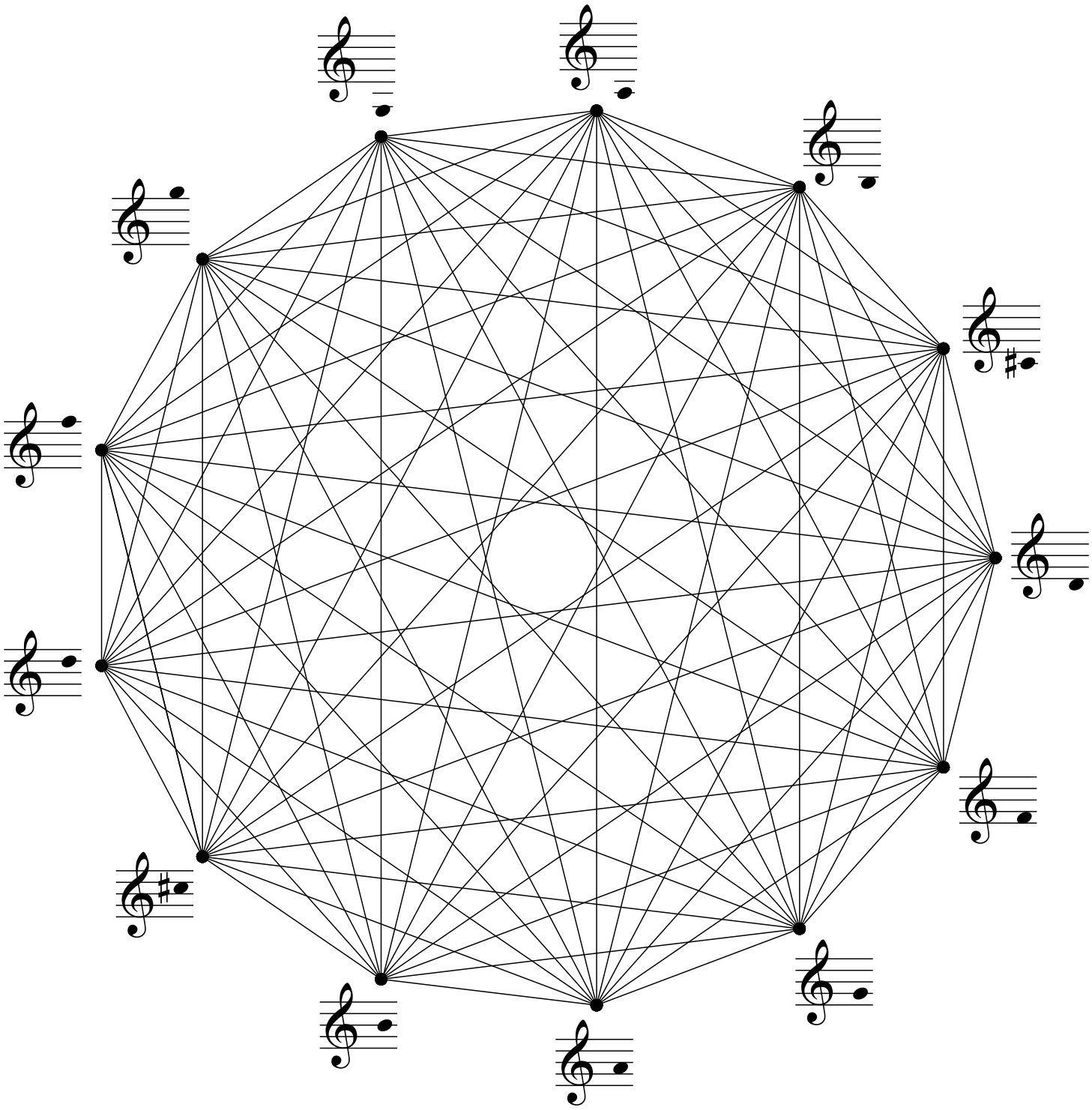








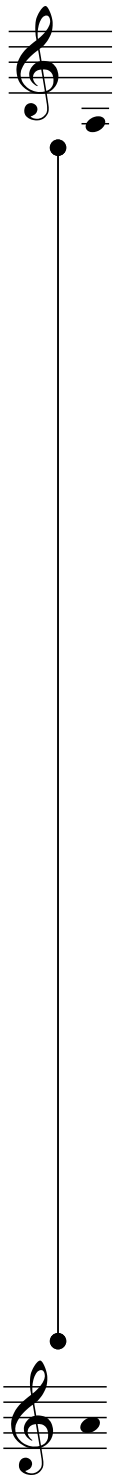


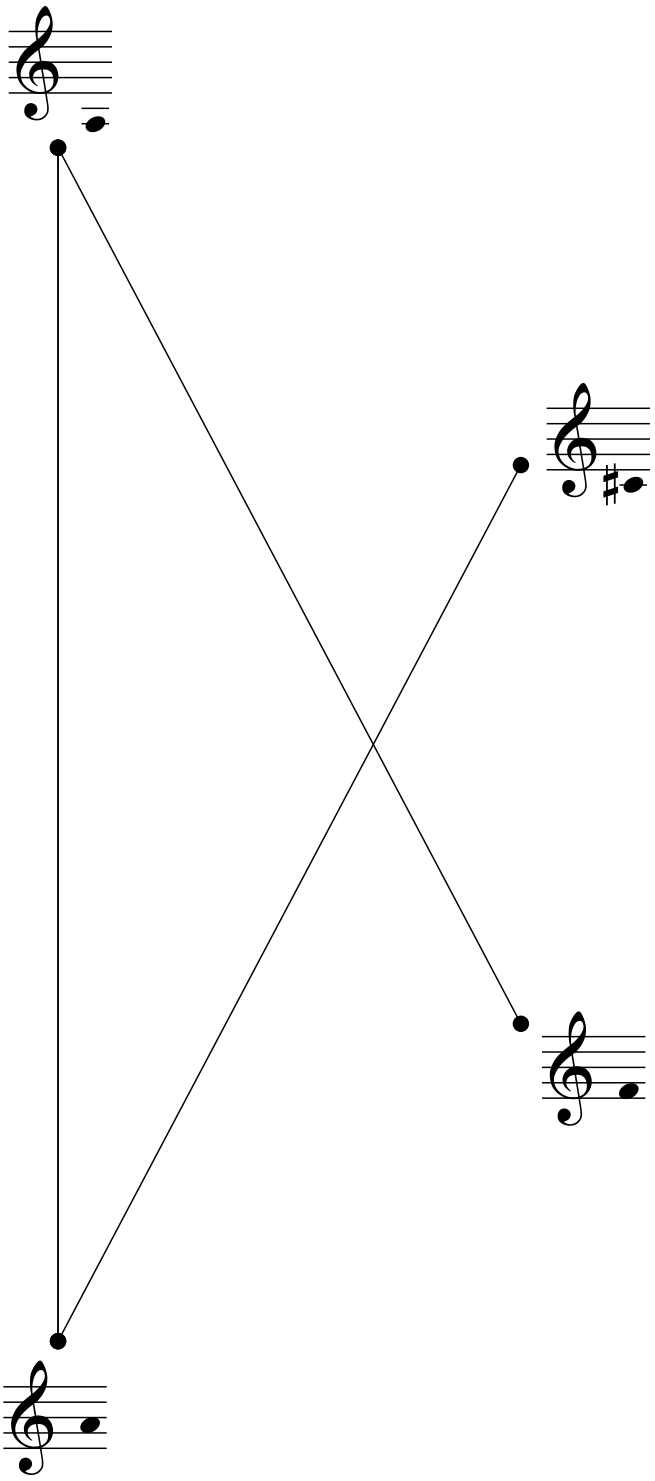


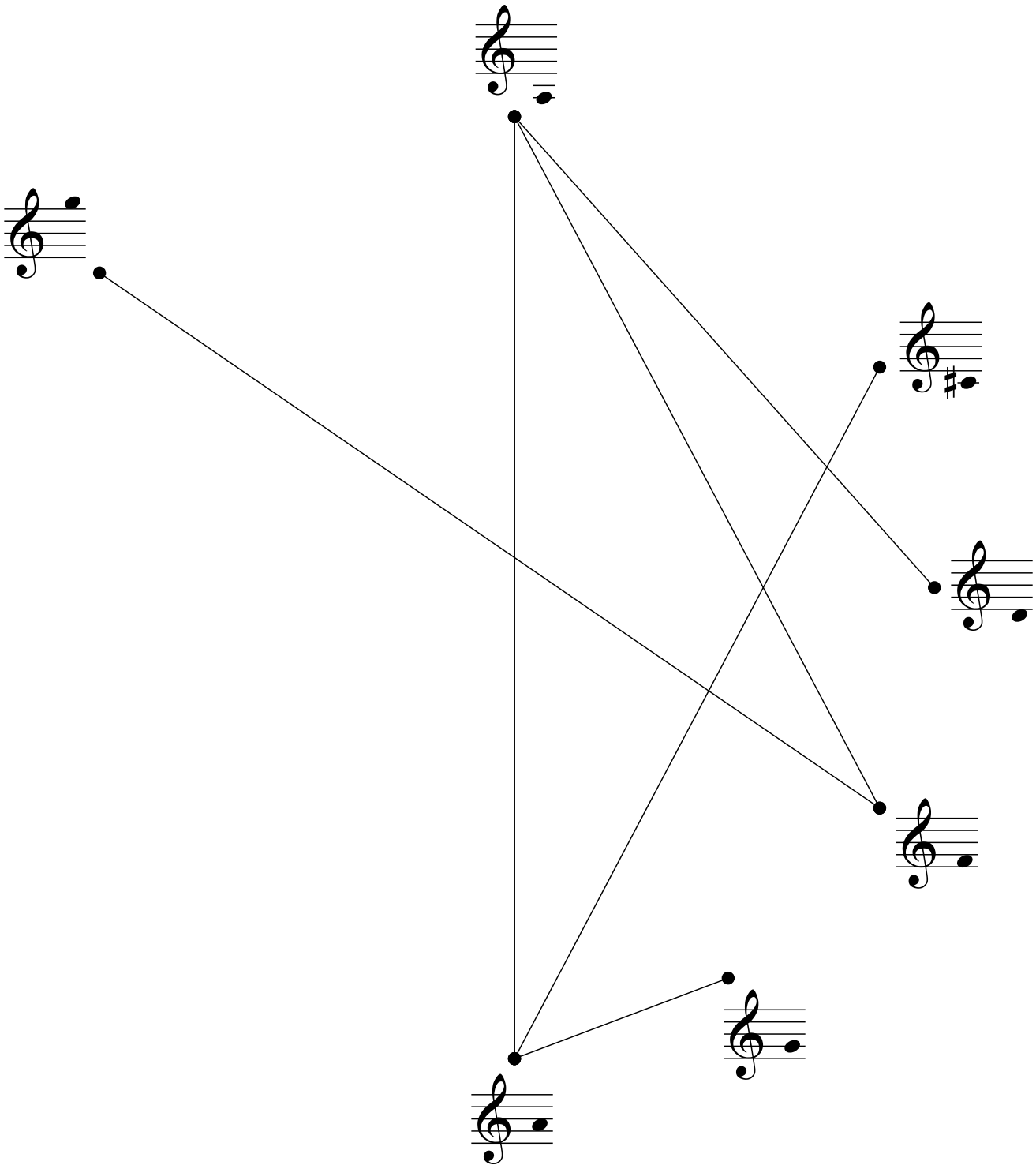
towards completeness

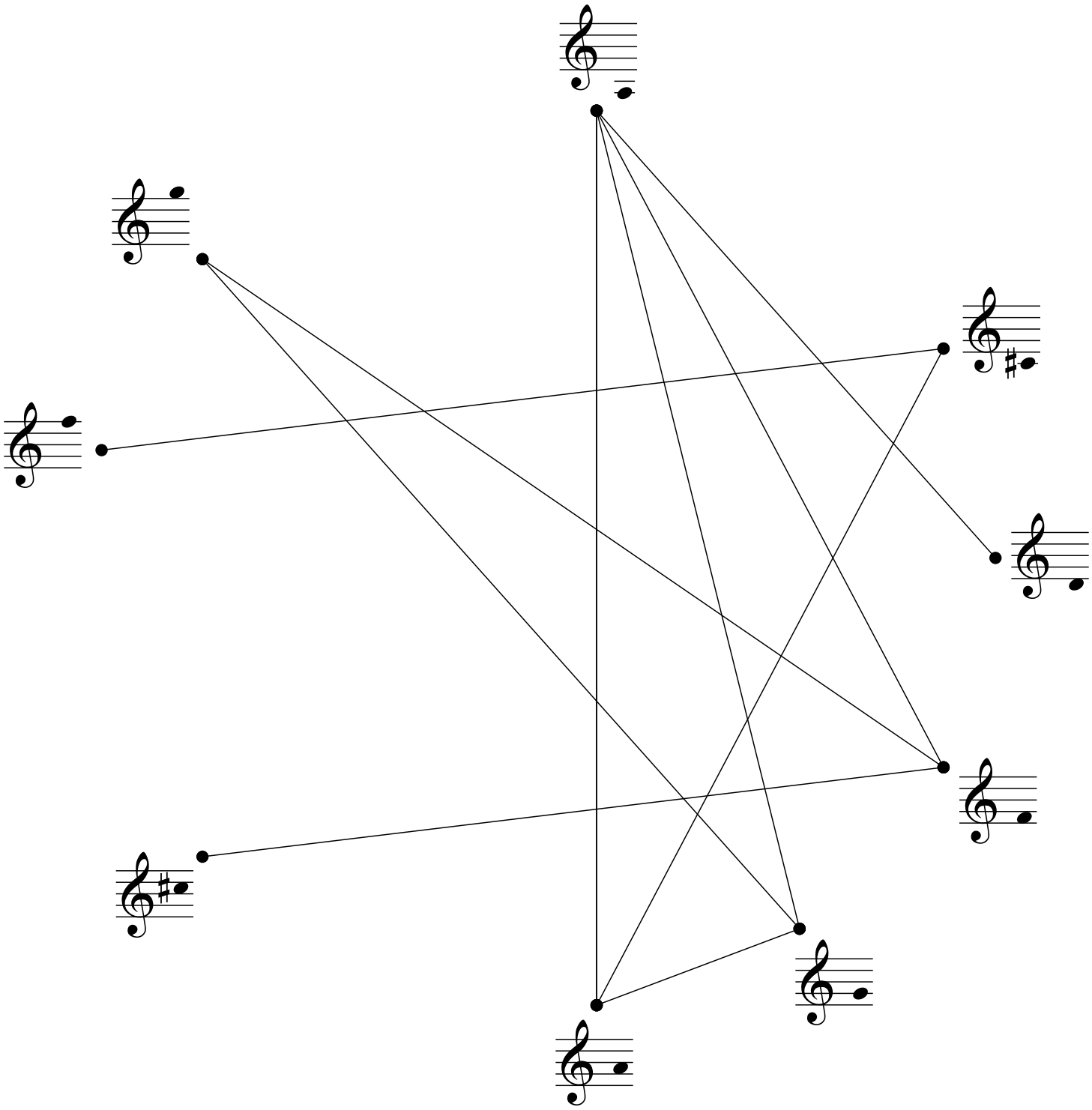
score realization 5
sections 3 - 14

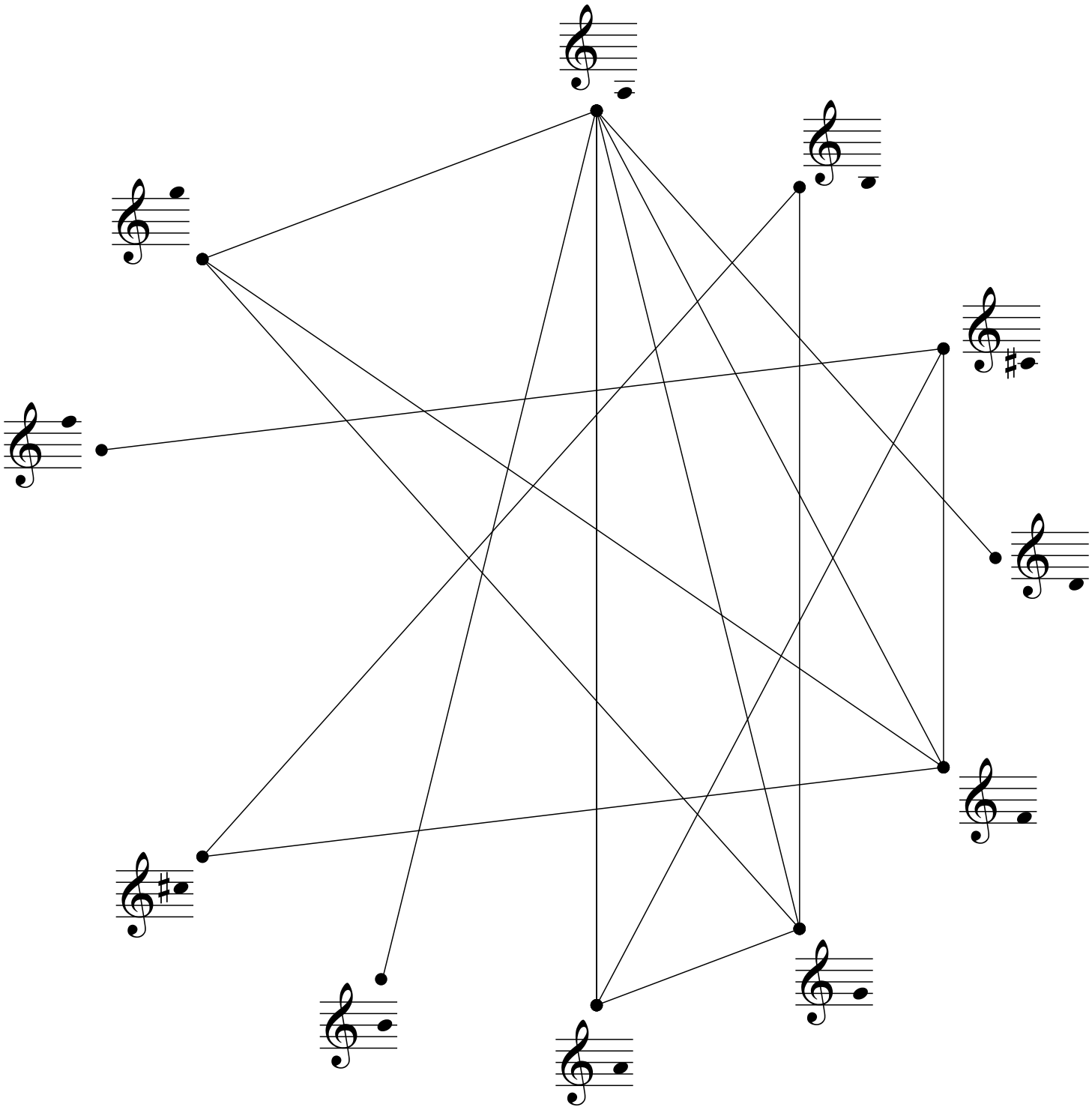
mike winter (2008)

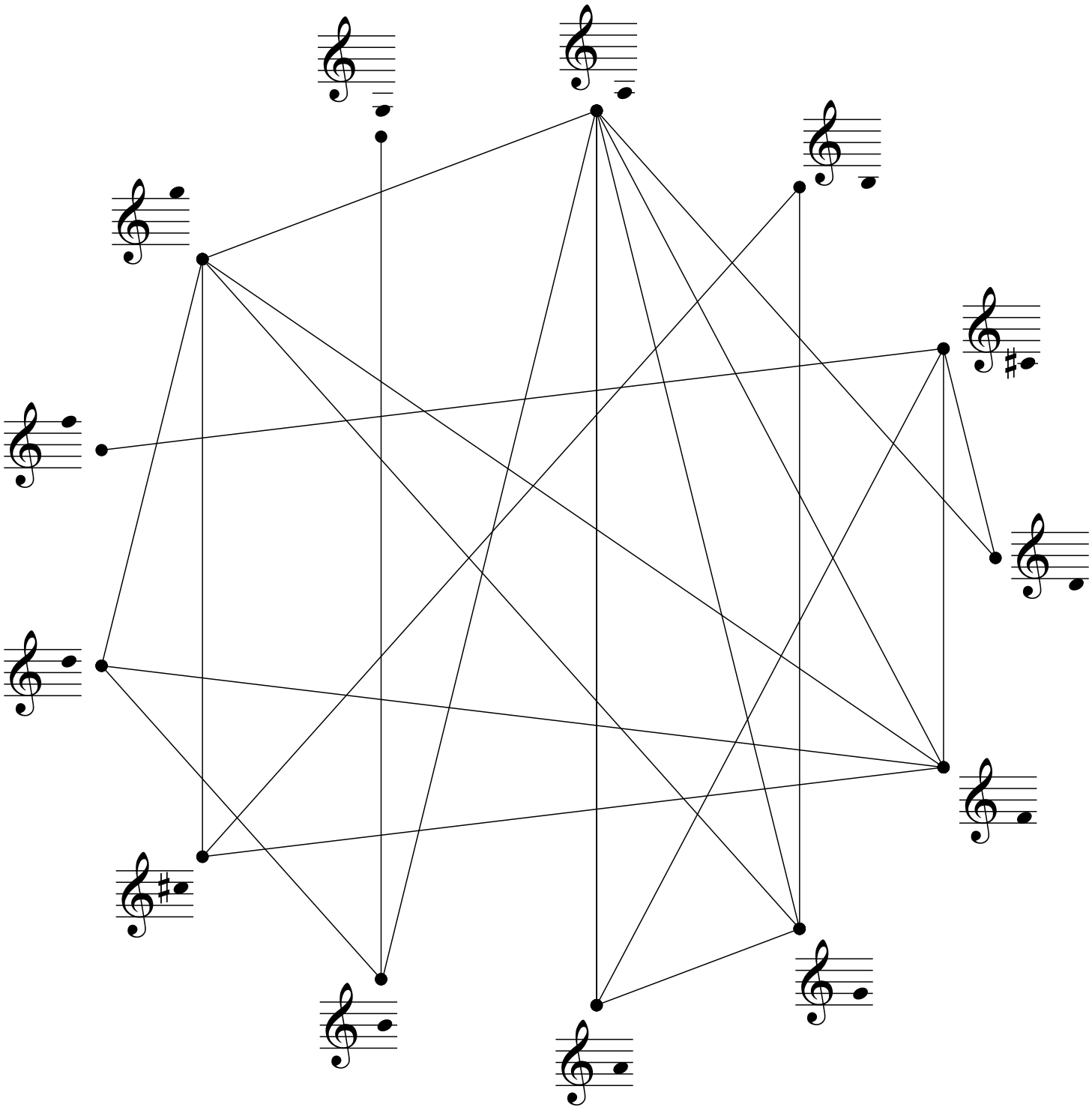


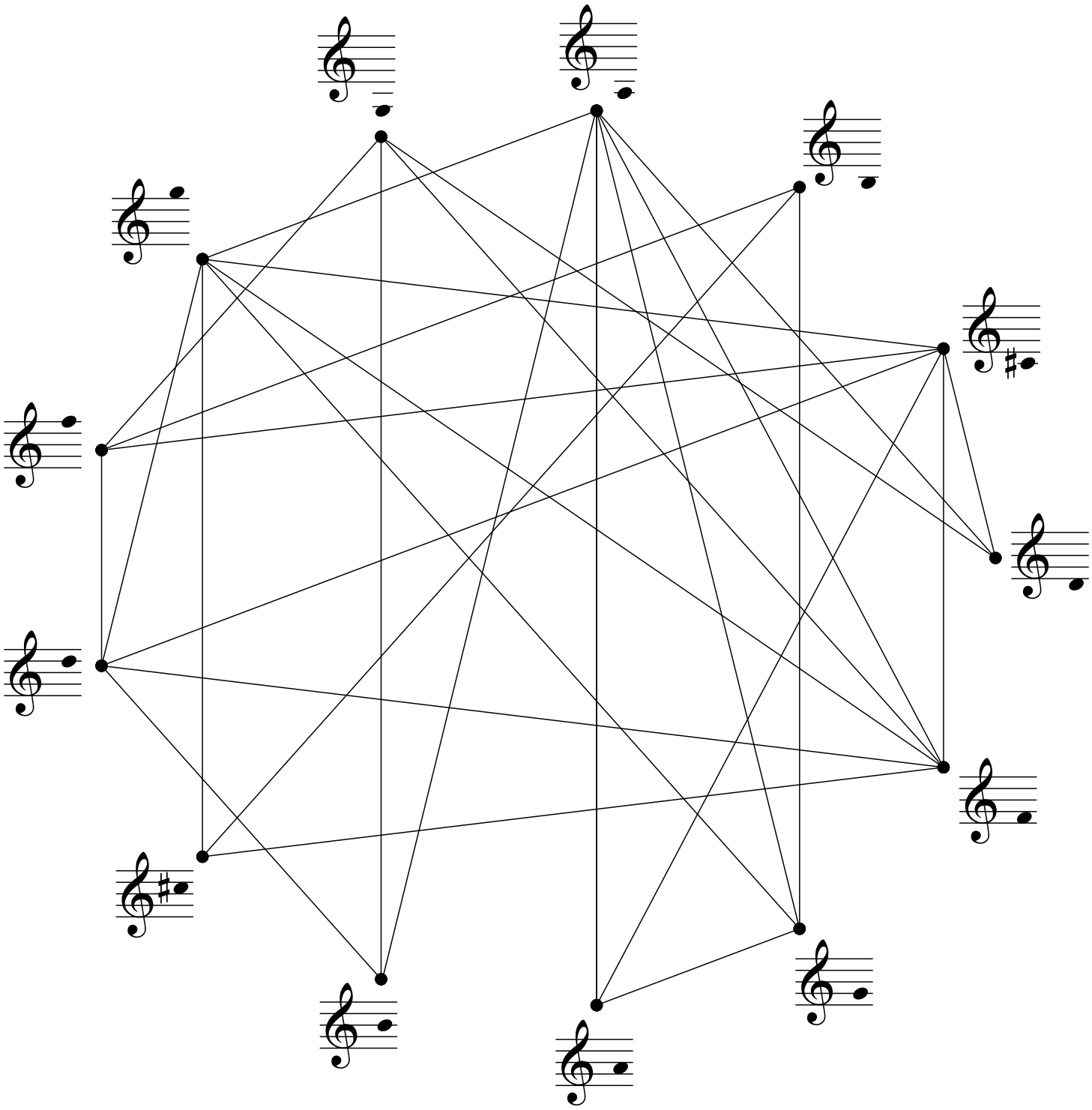


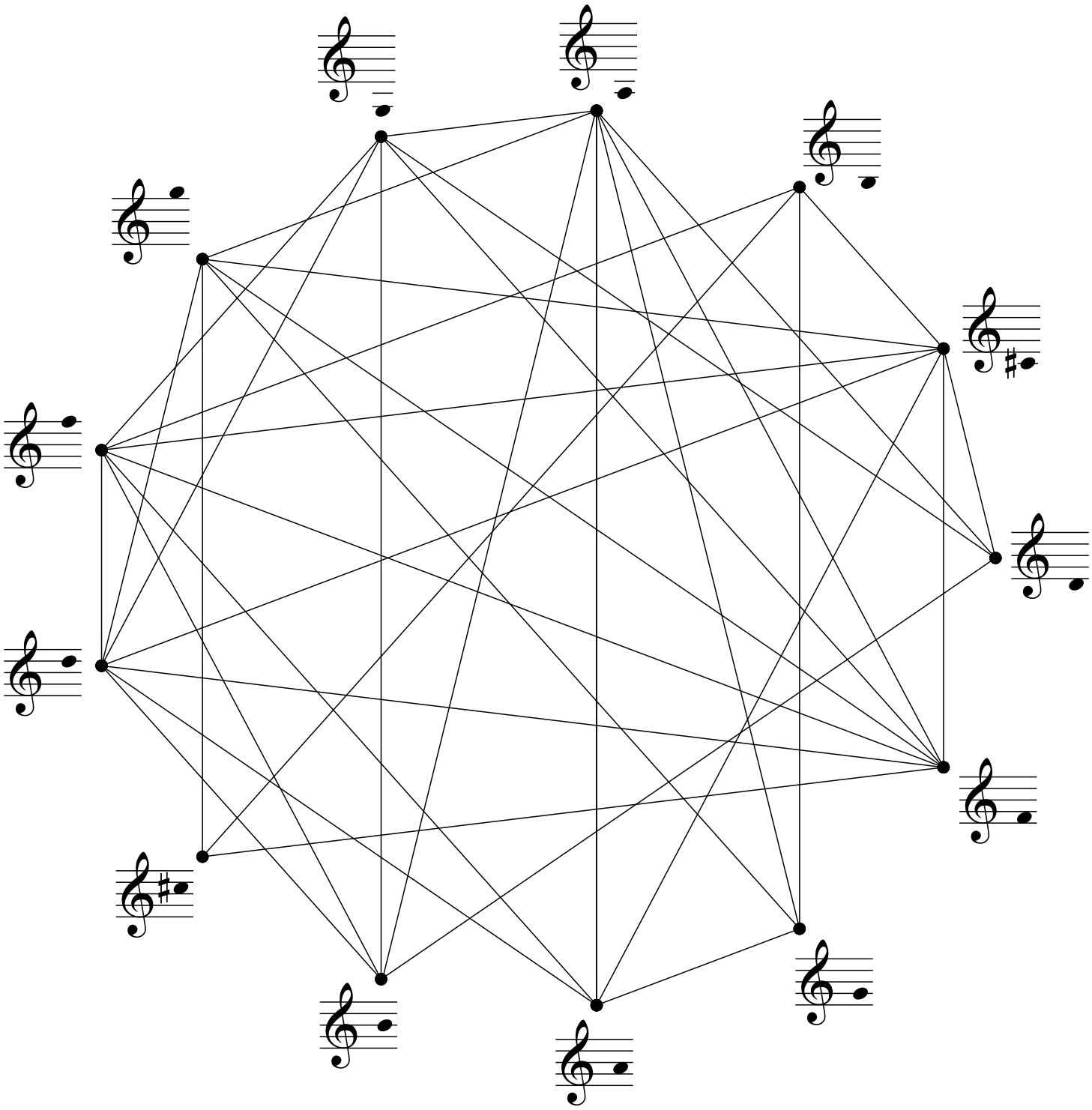


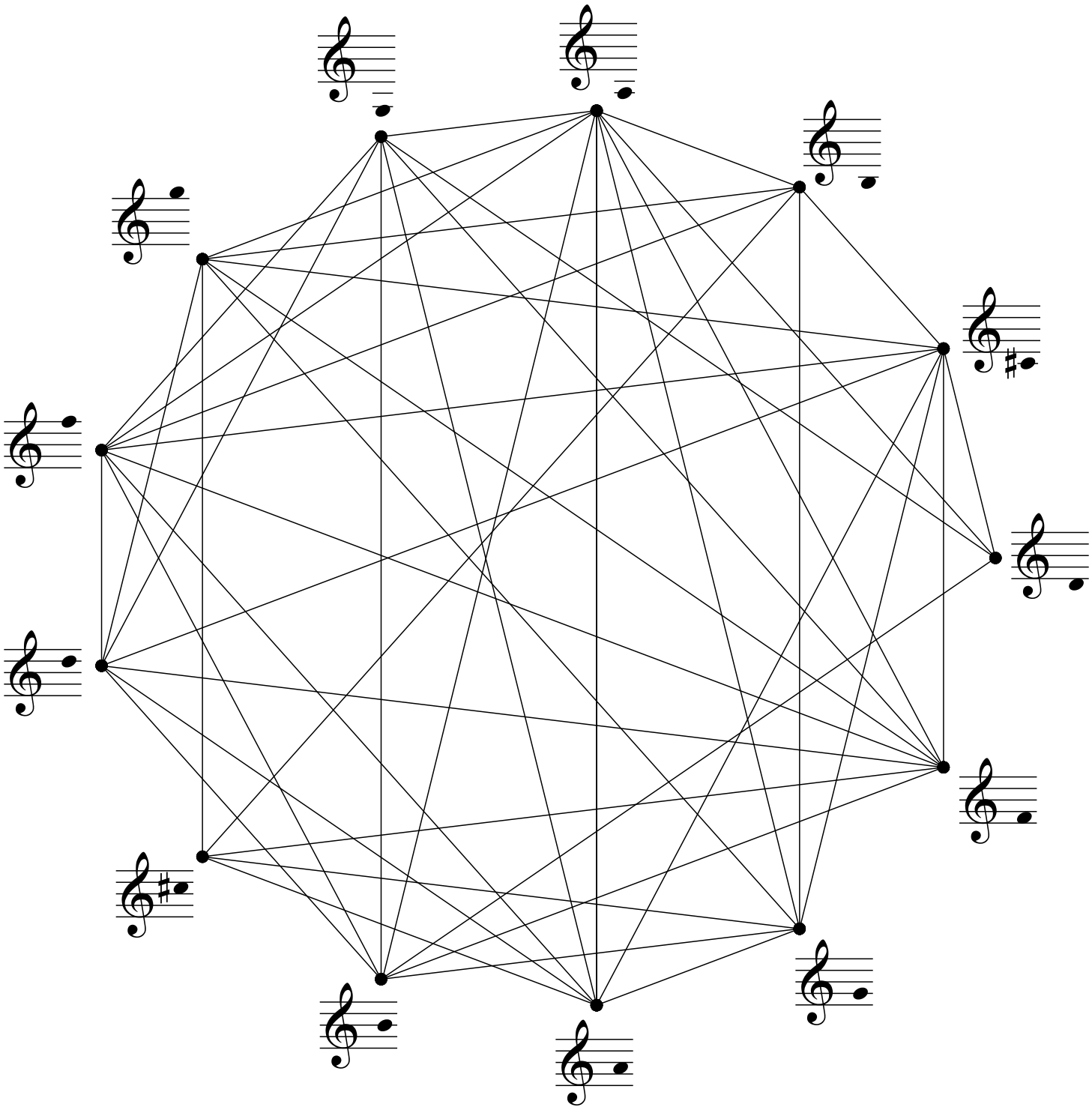


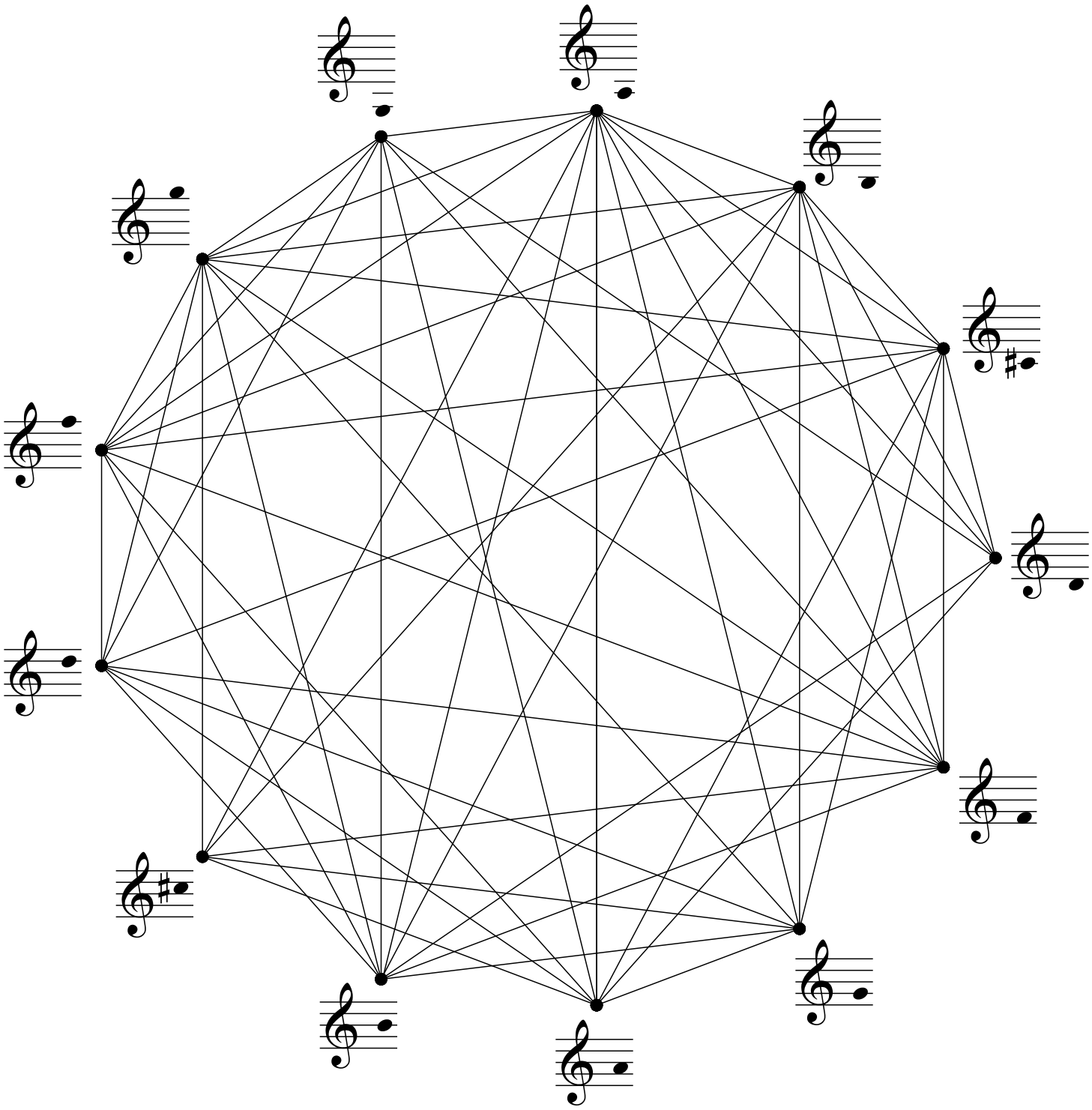


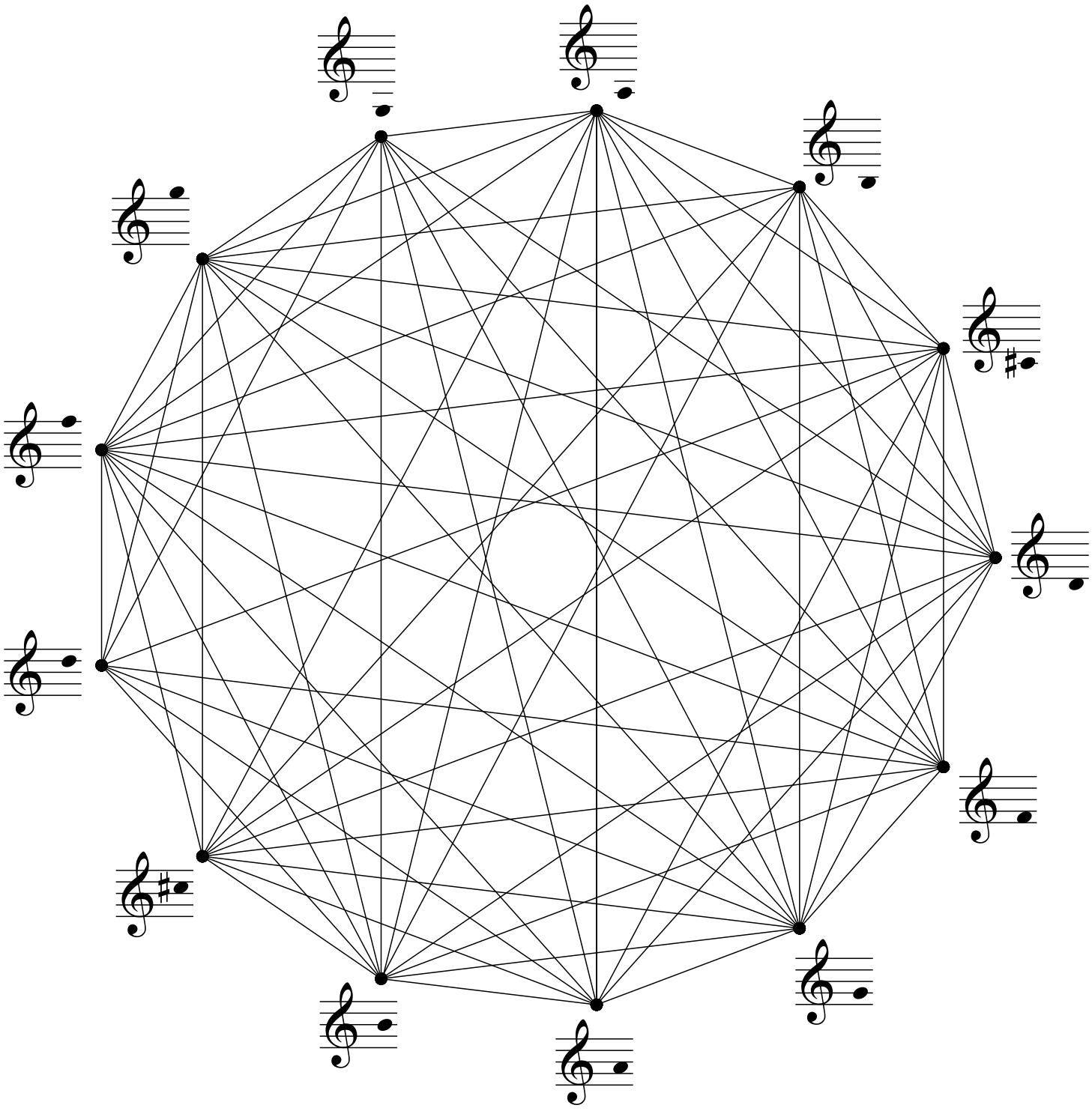


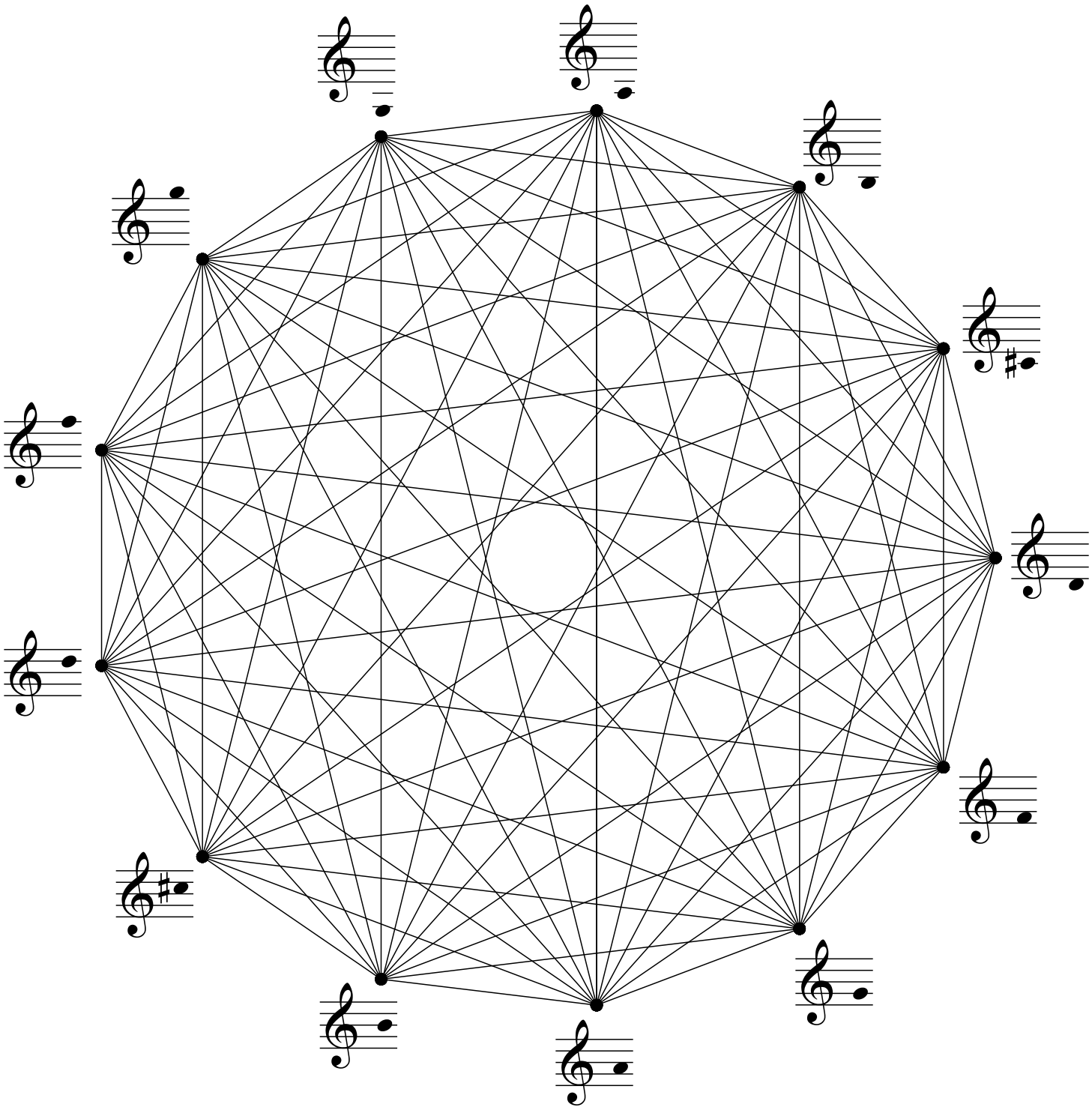








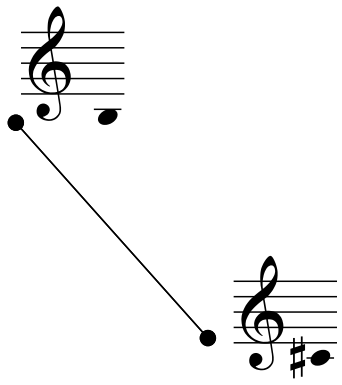


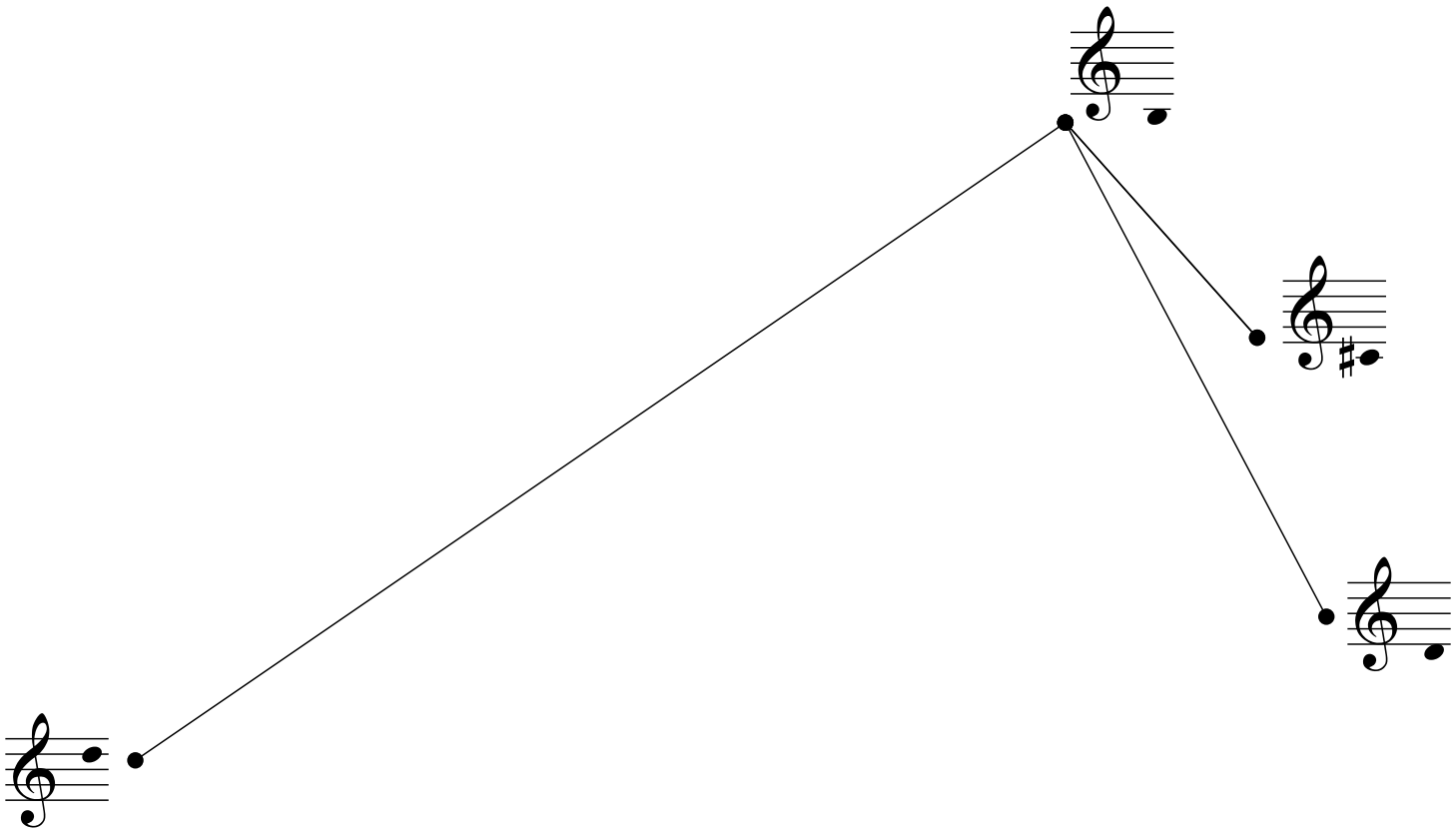


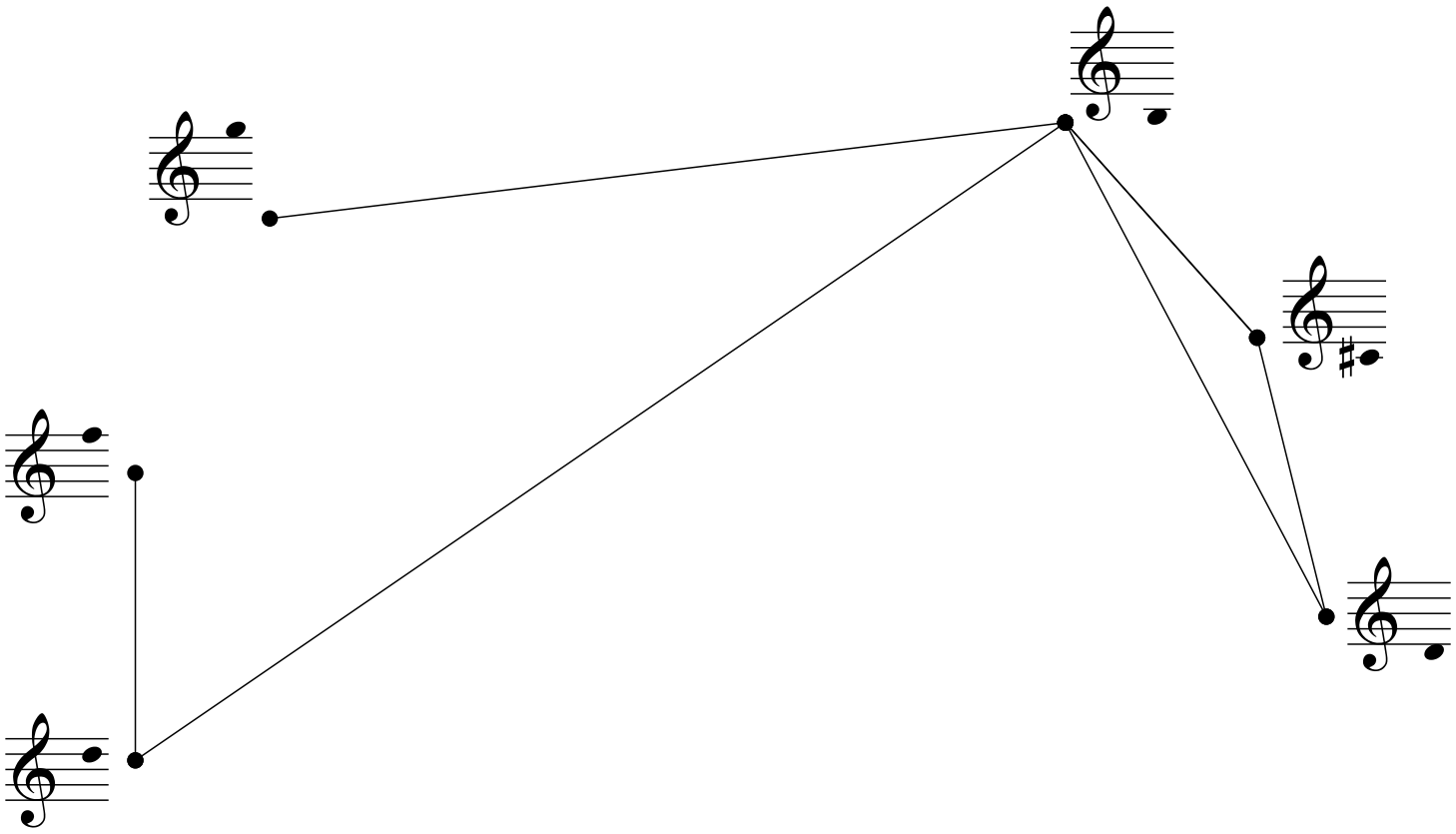
towards completeness

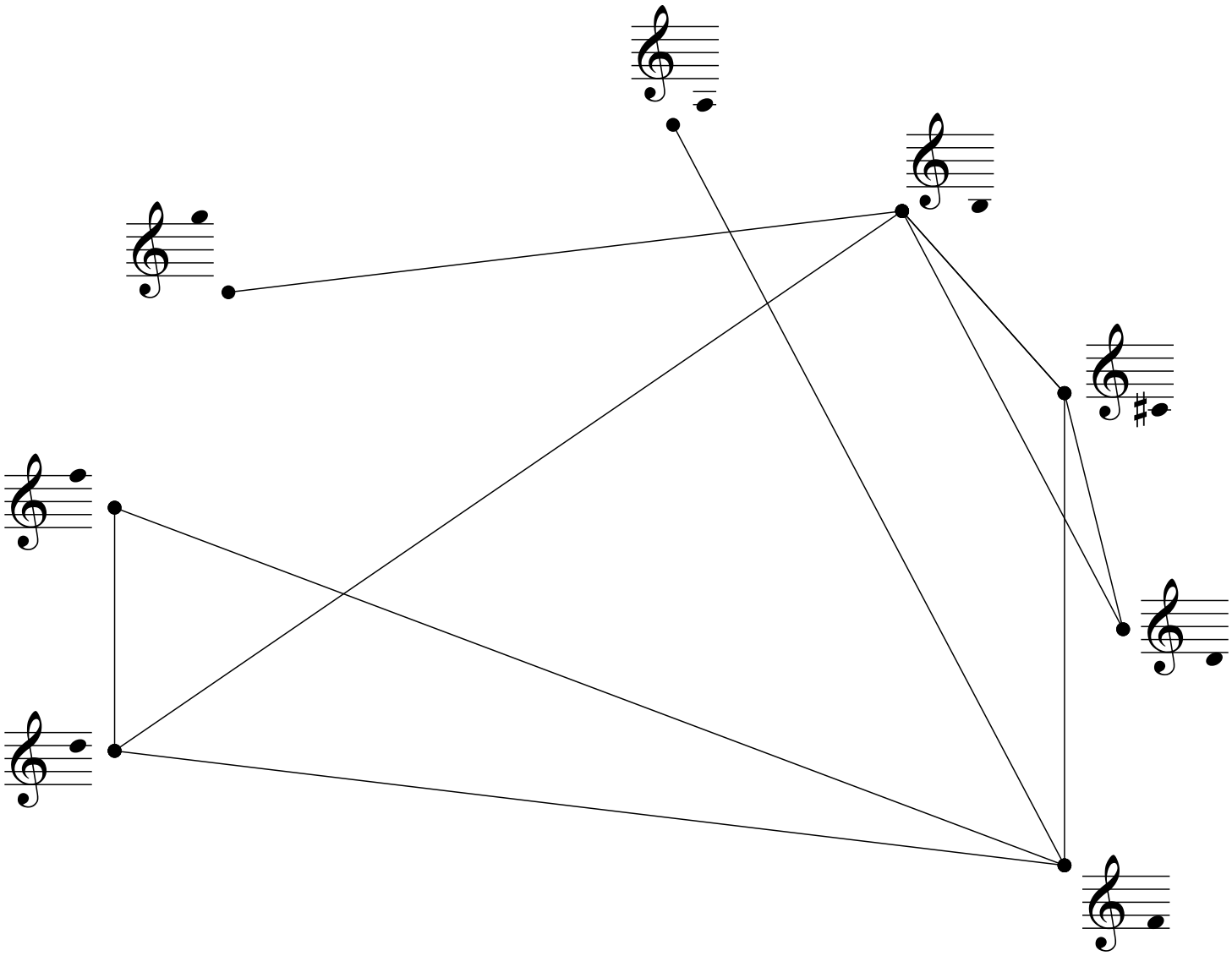
score realization 6
sections 3 - 14

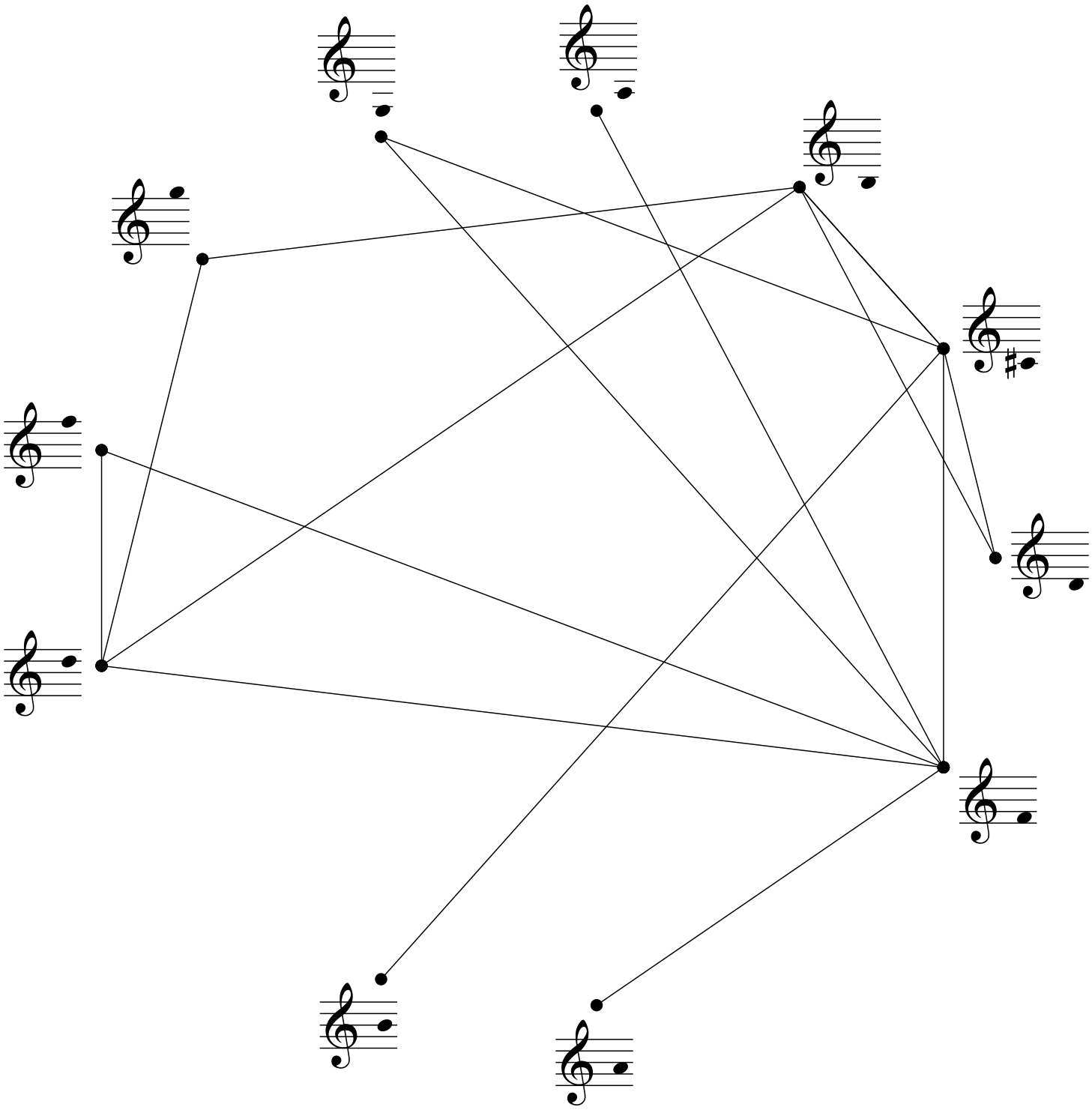
mike winter (2008)

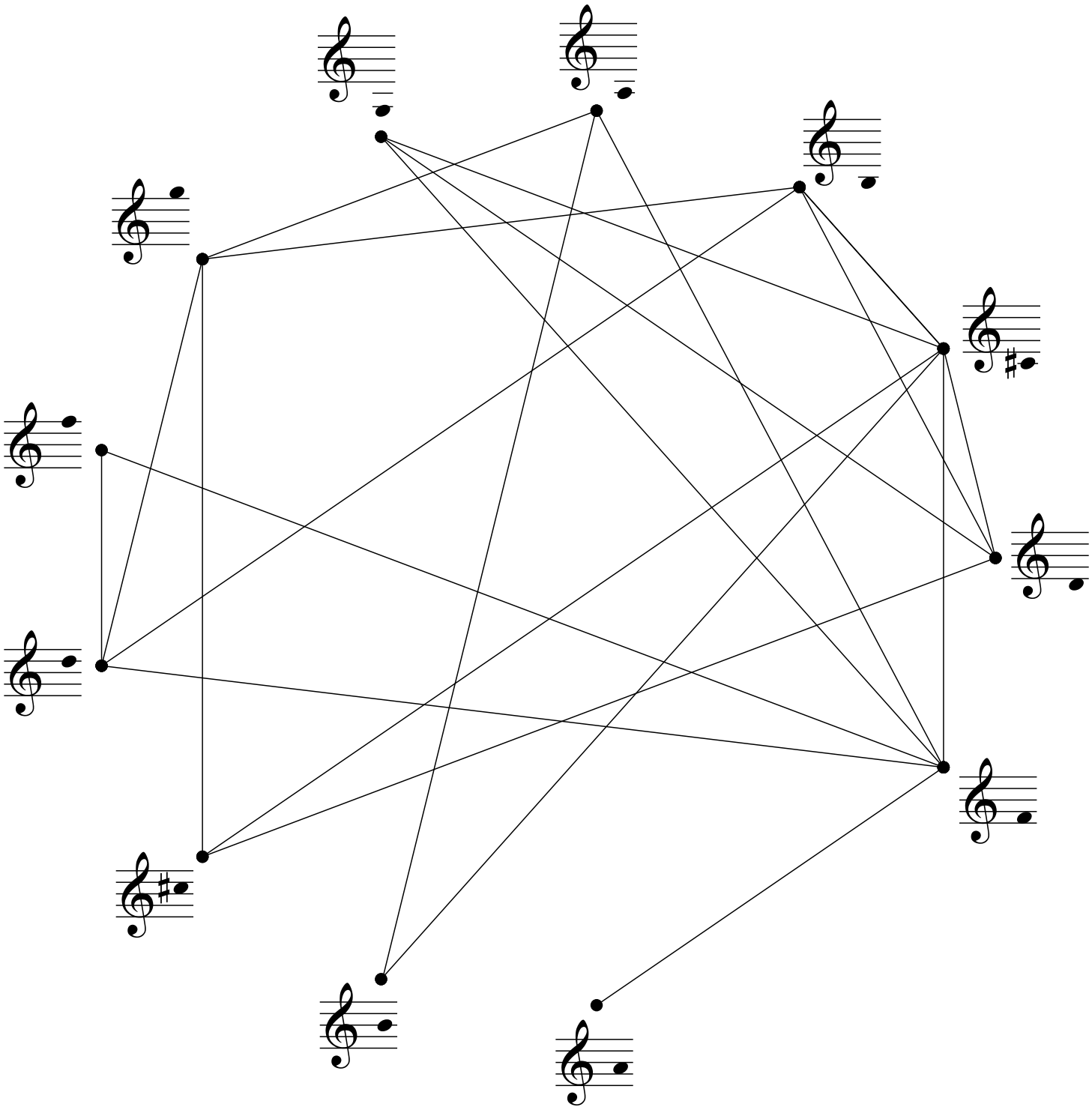


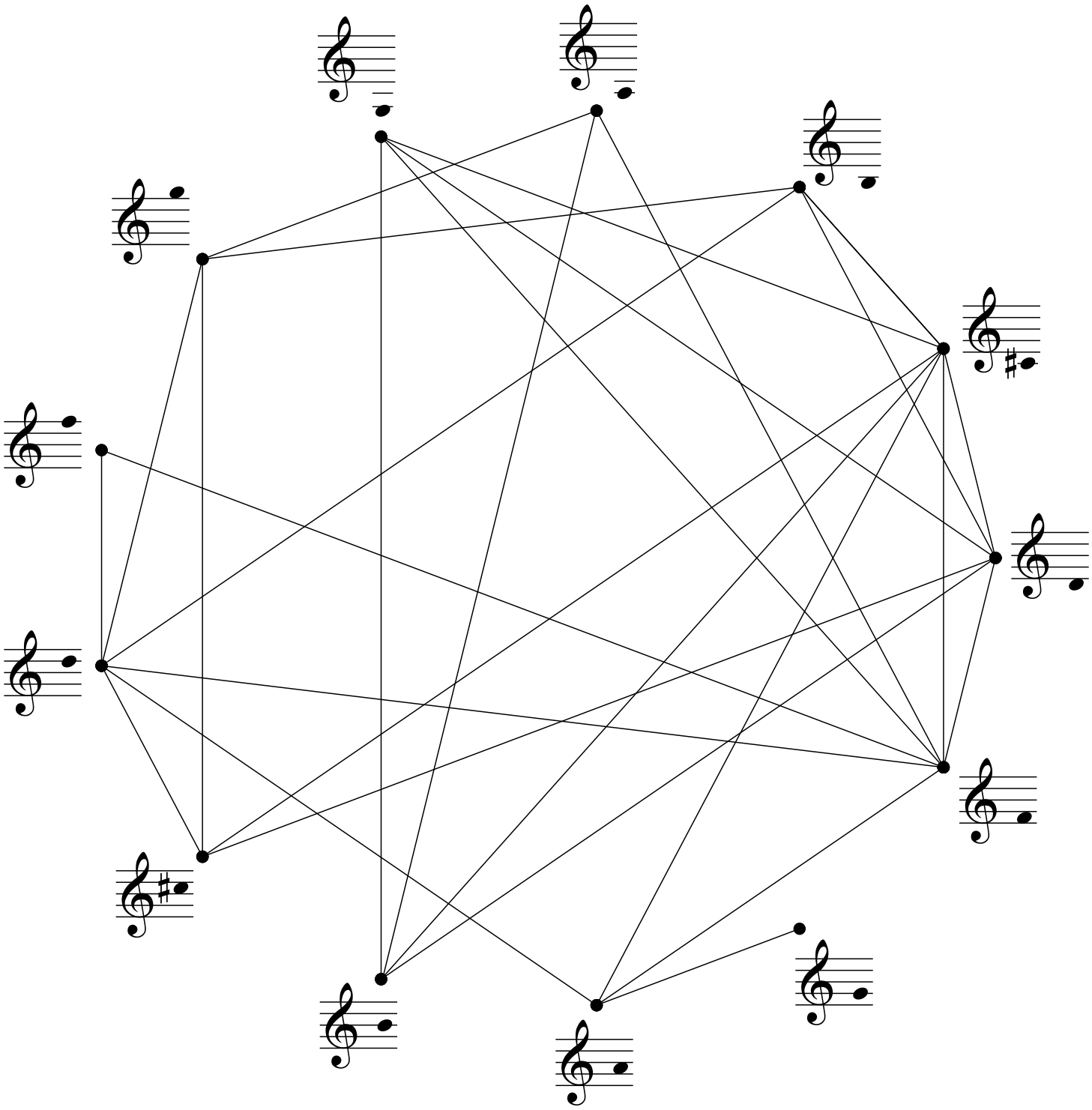


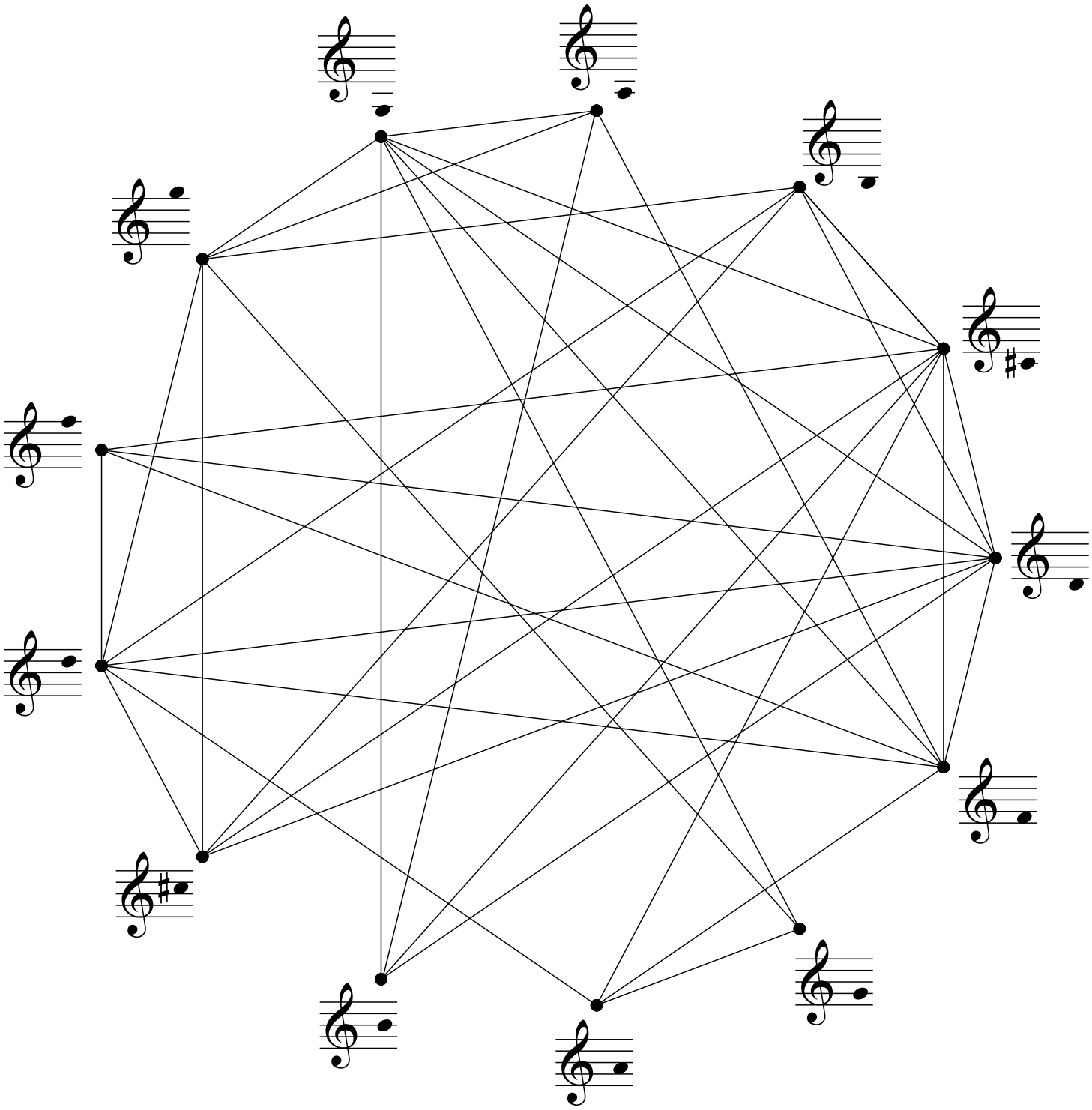


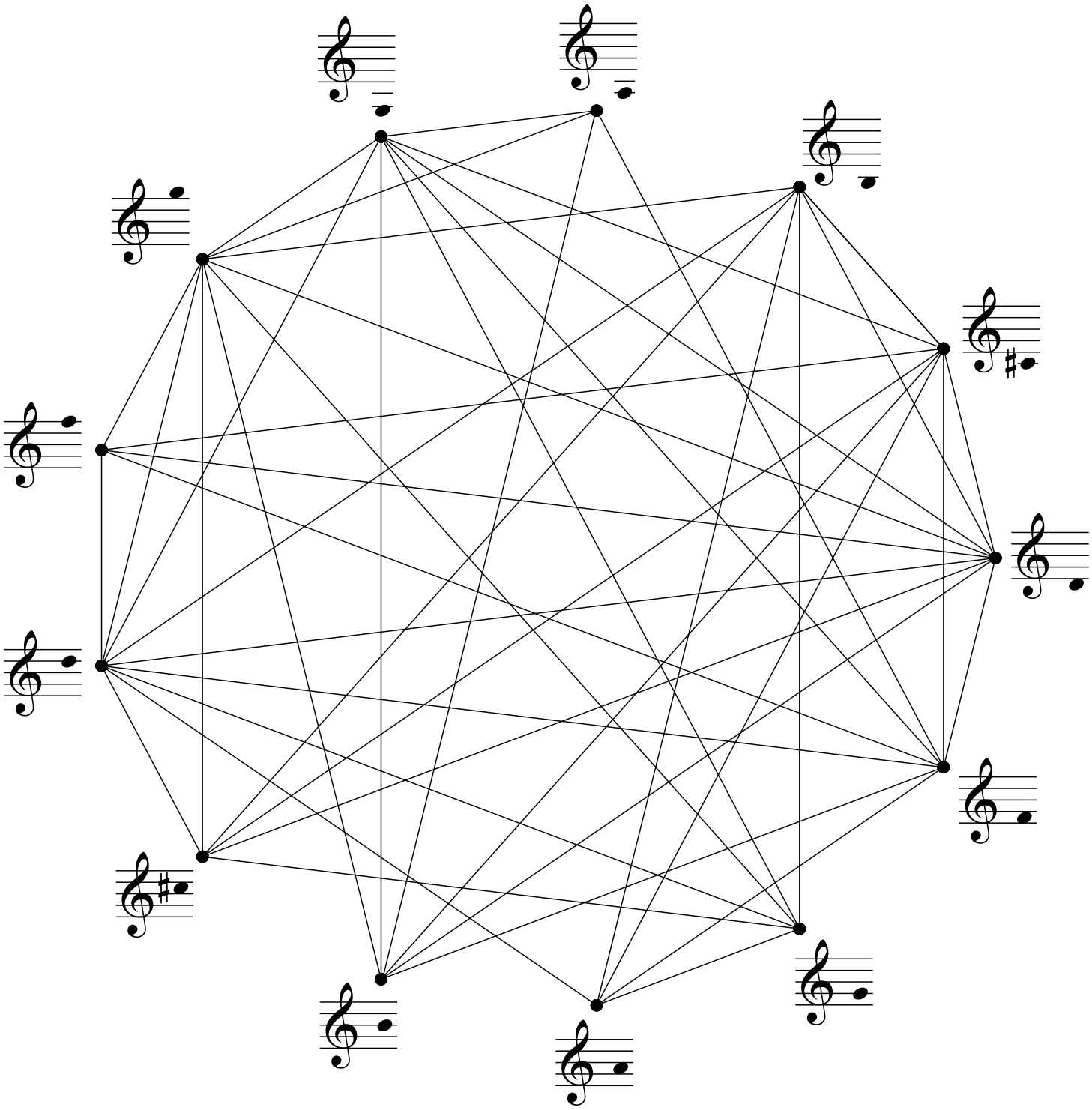


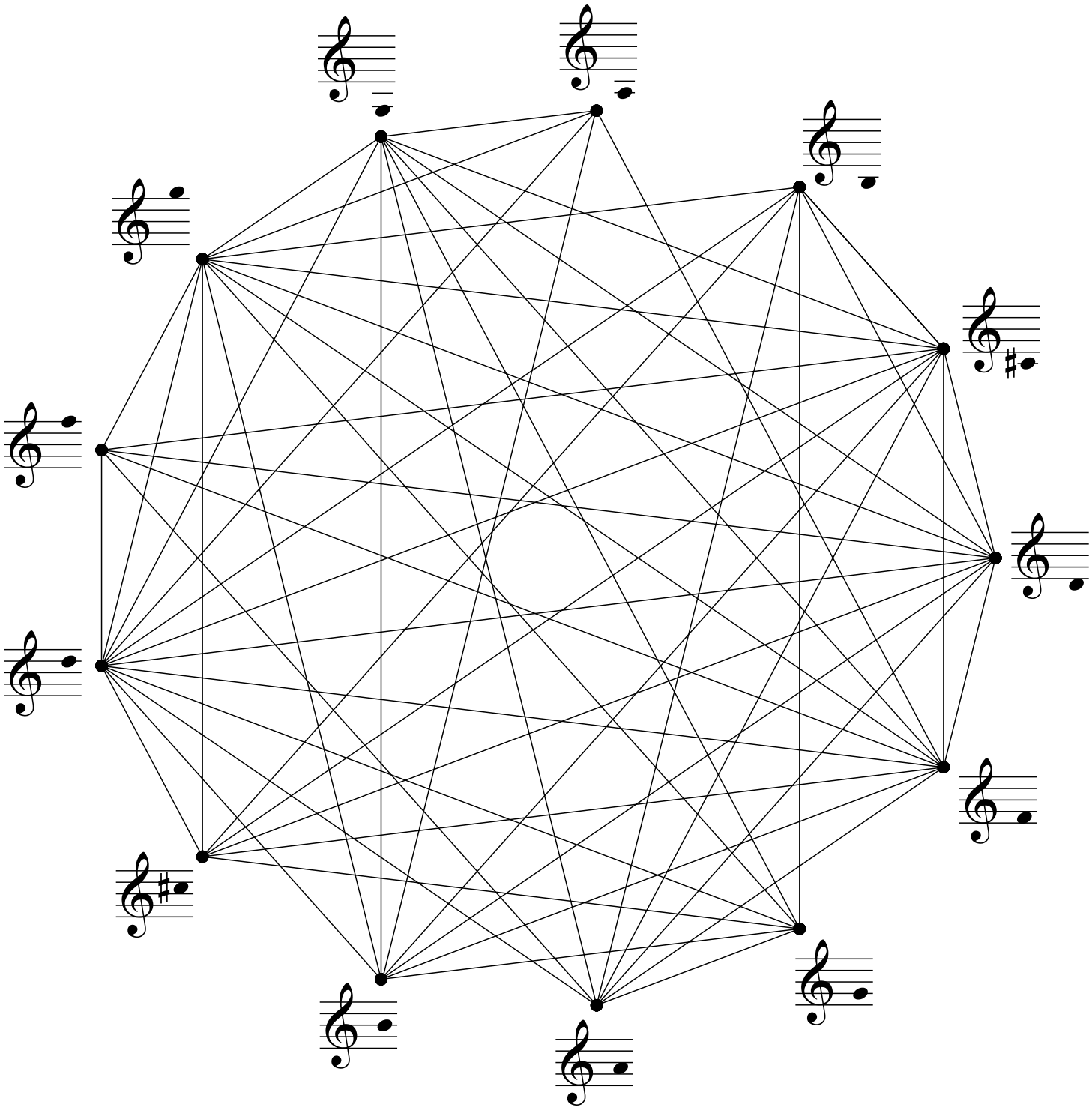


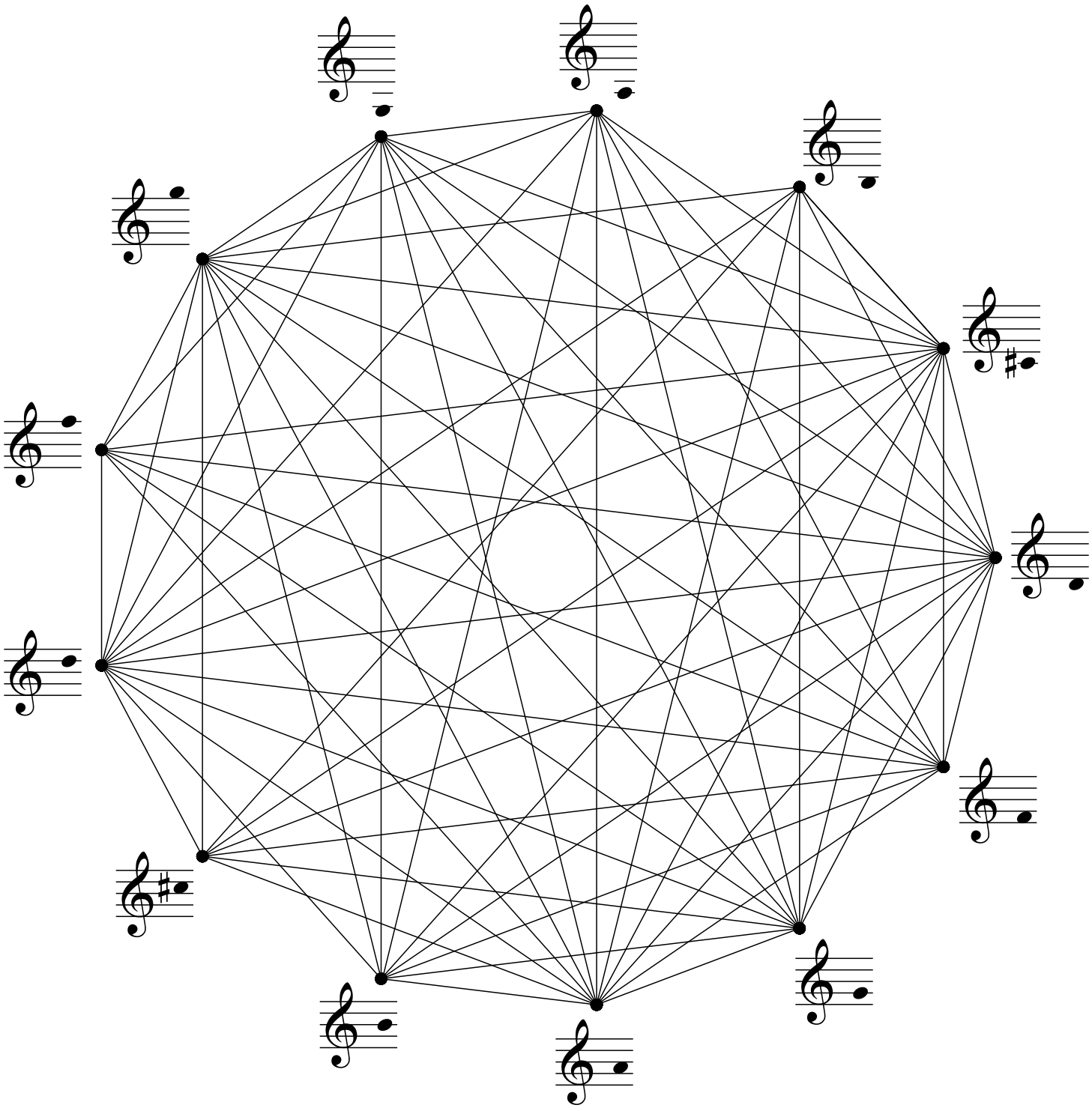


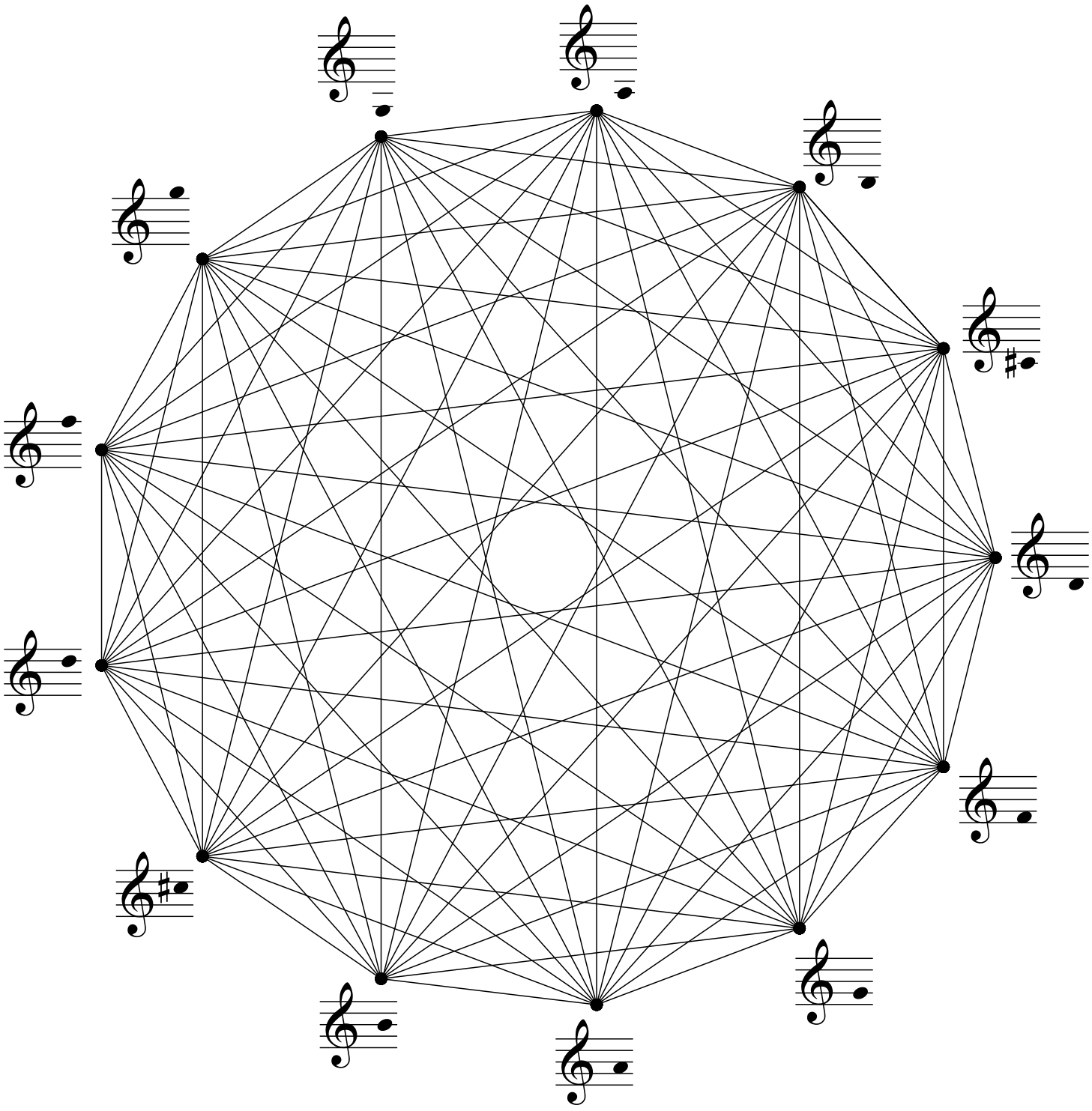








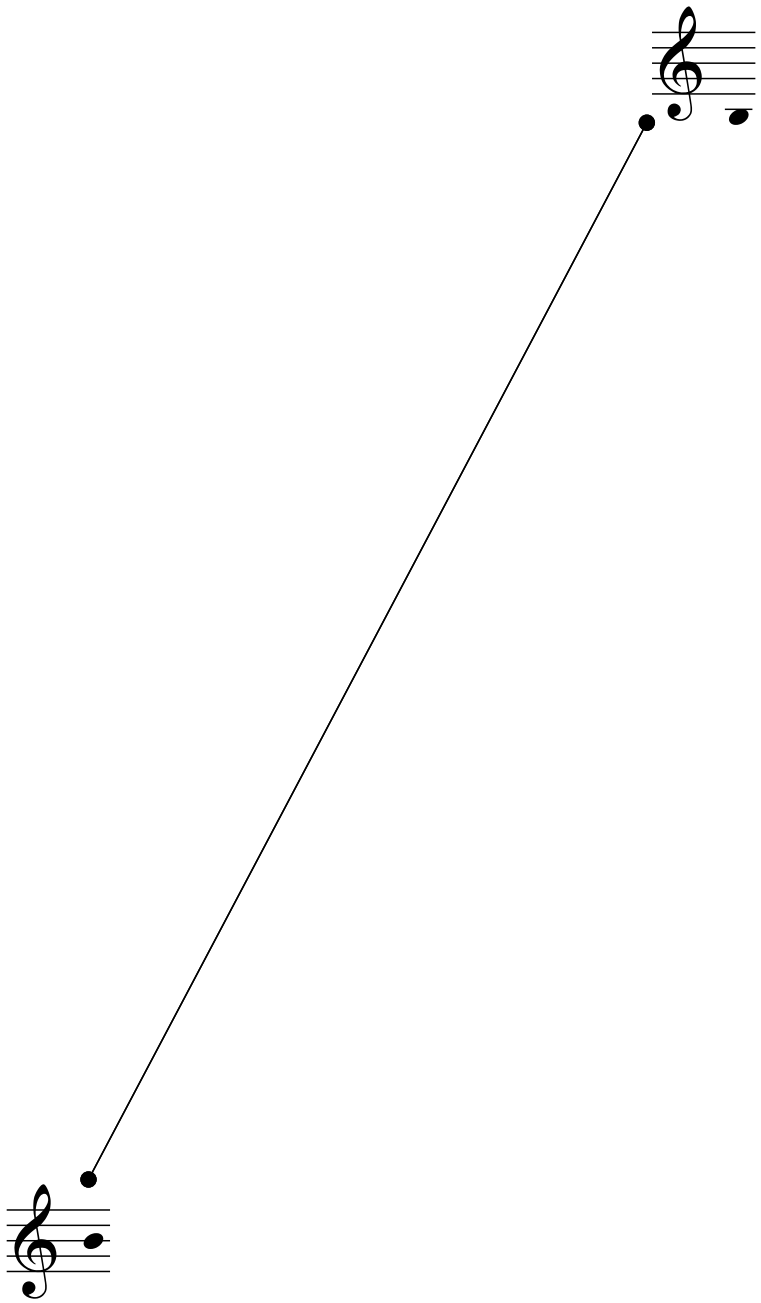


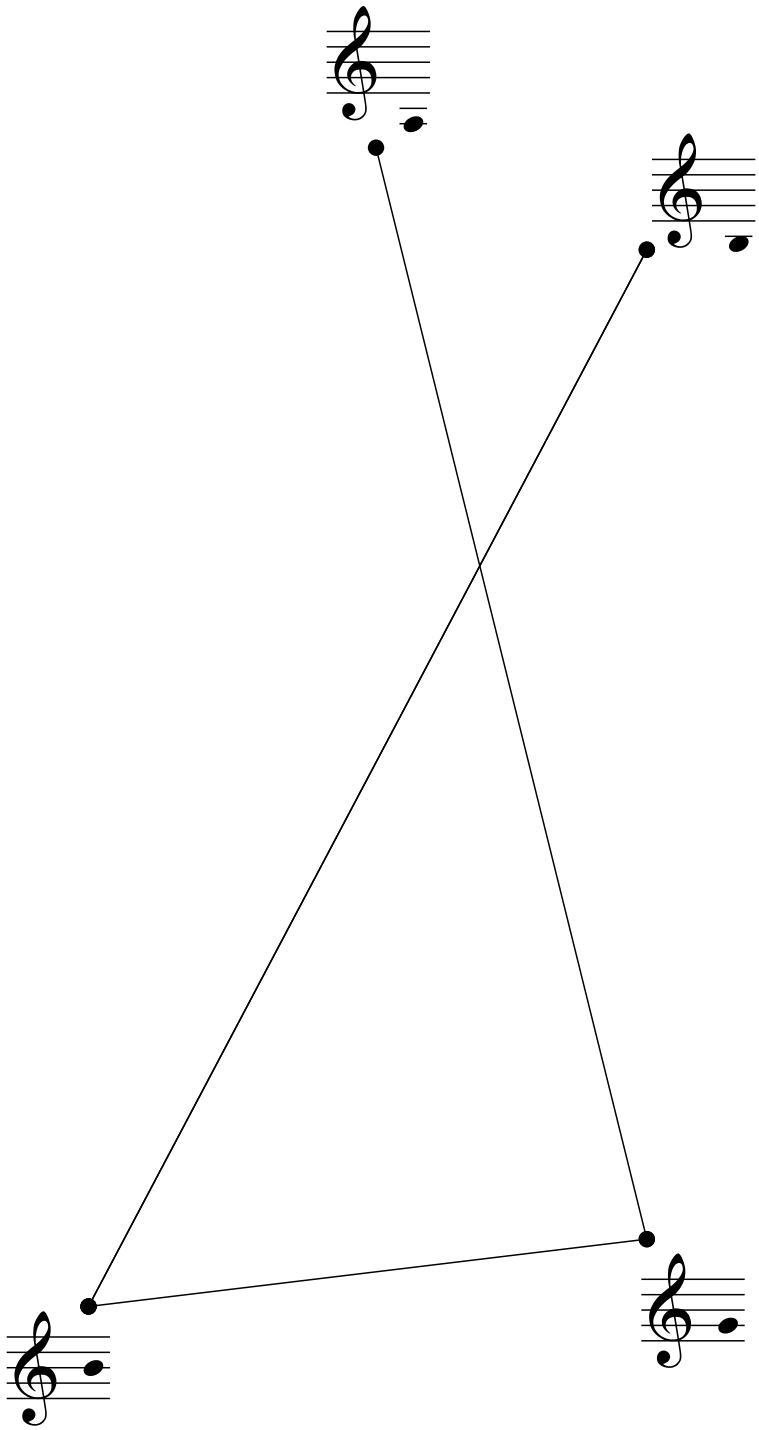


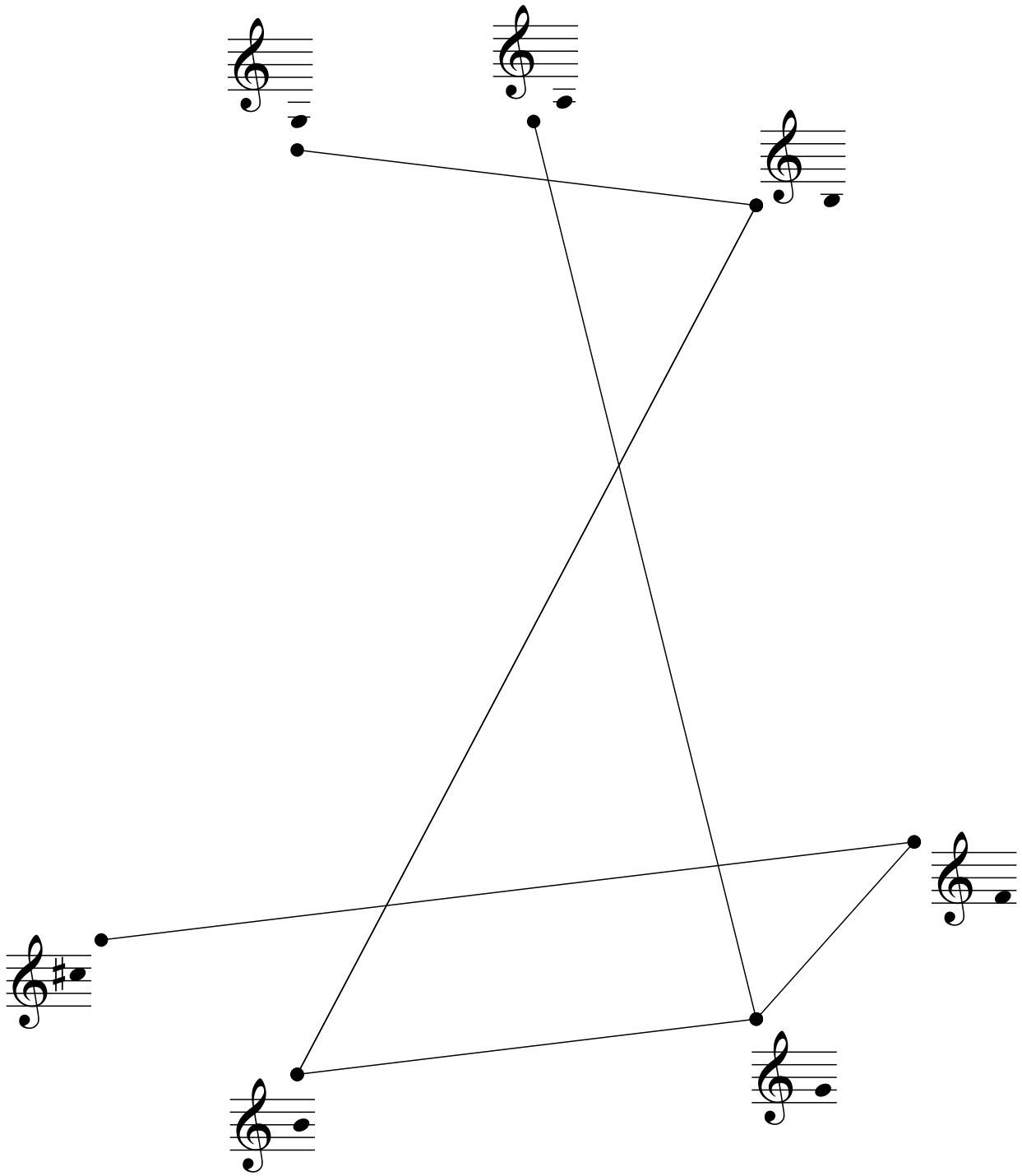
towards completeness

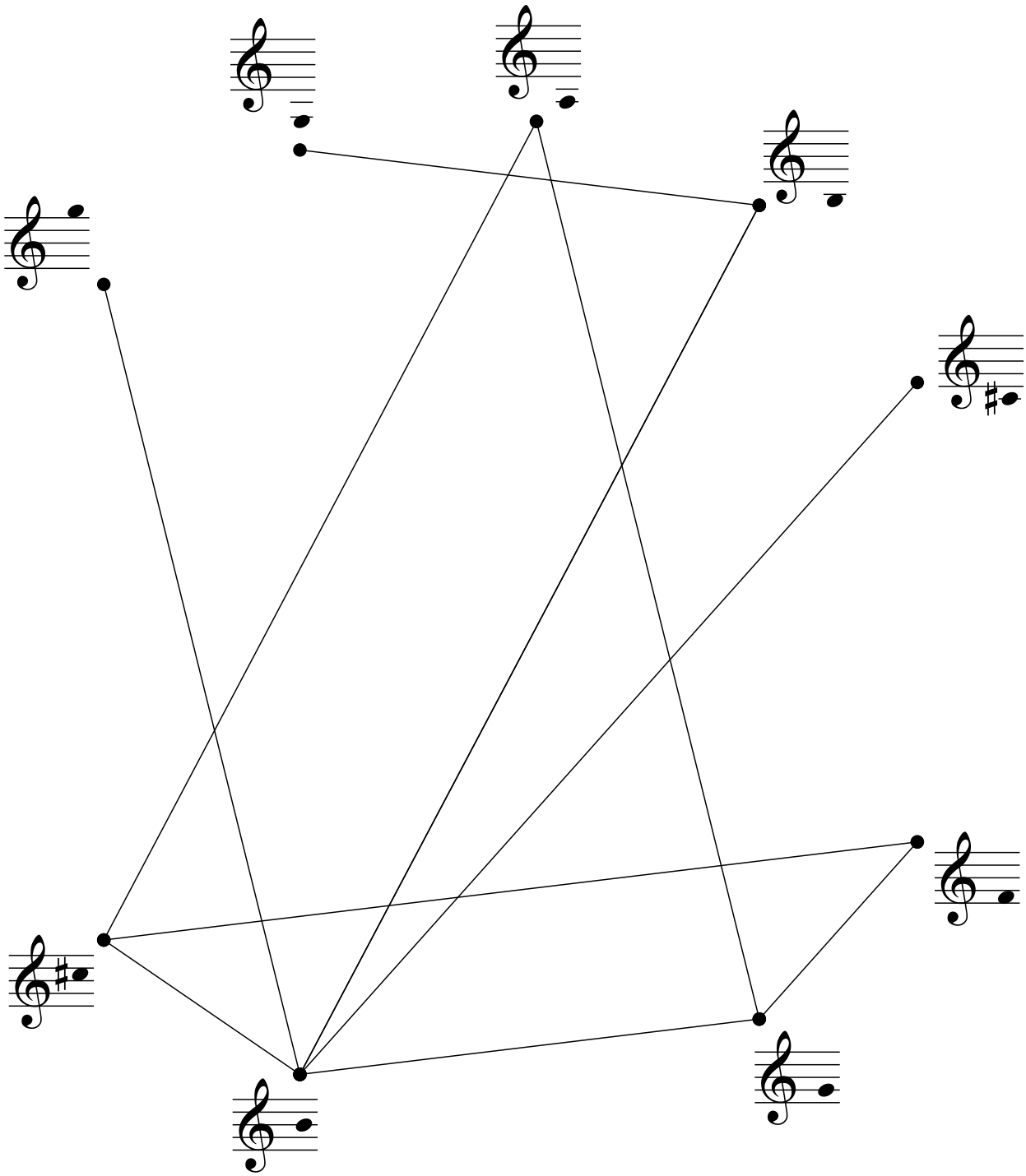
score realization 7
sections 3 - 14

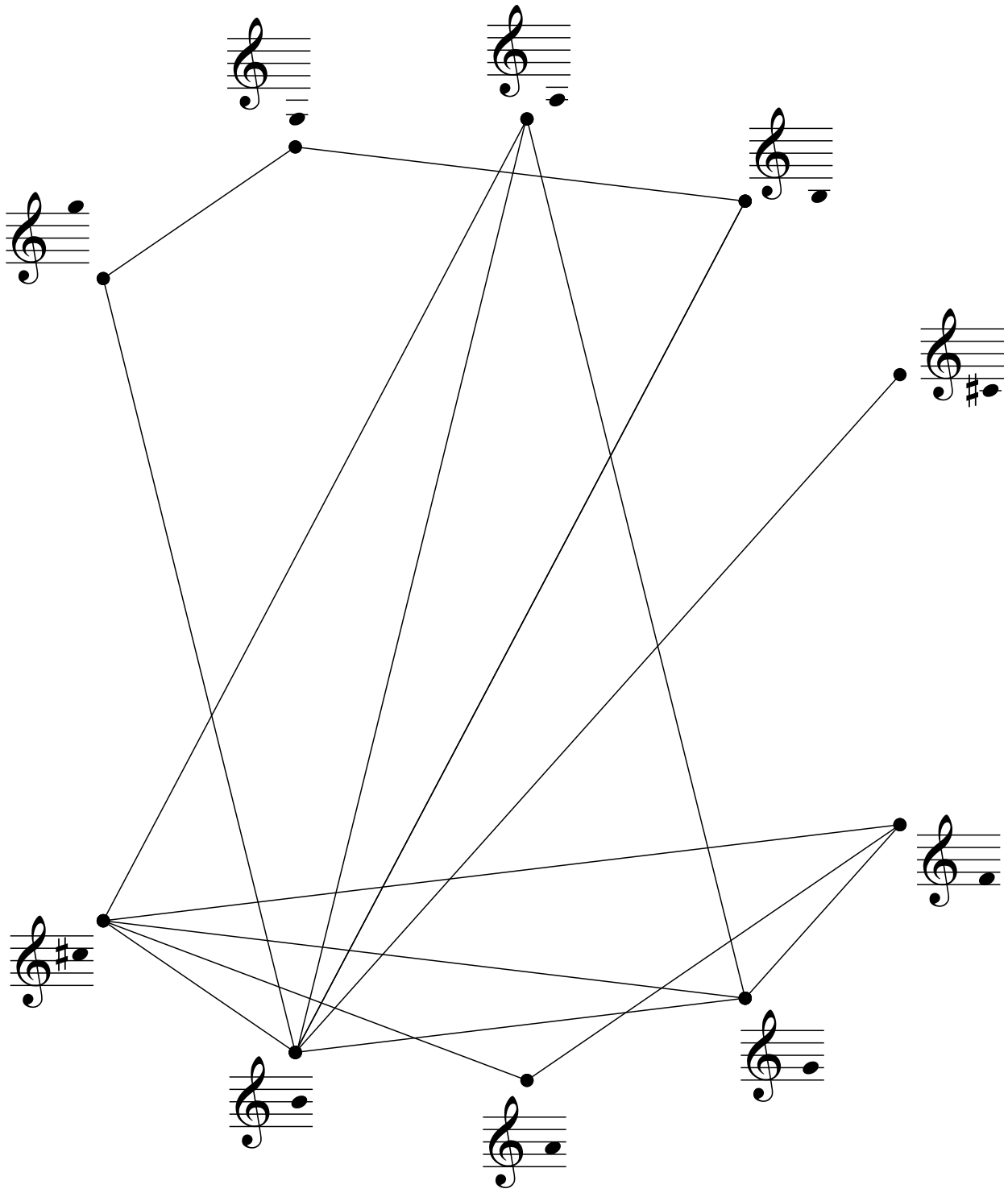
mike winter (2008)

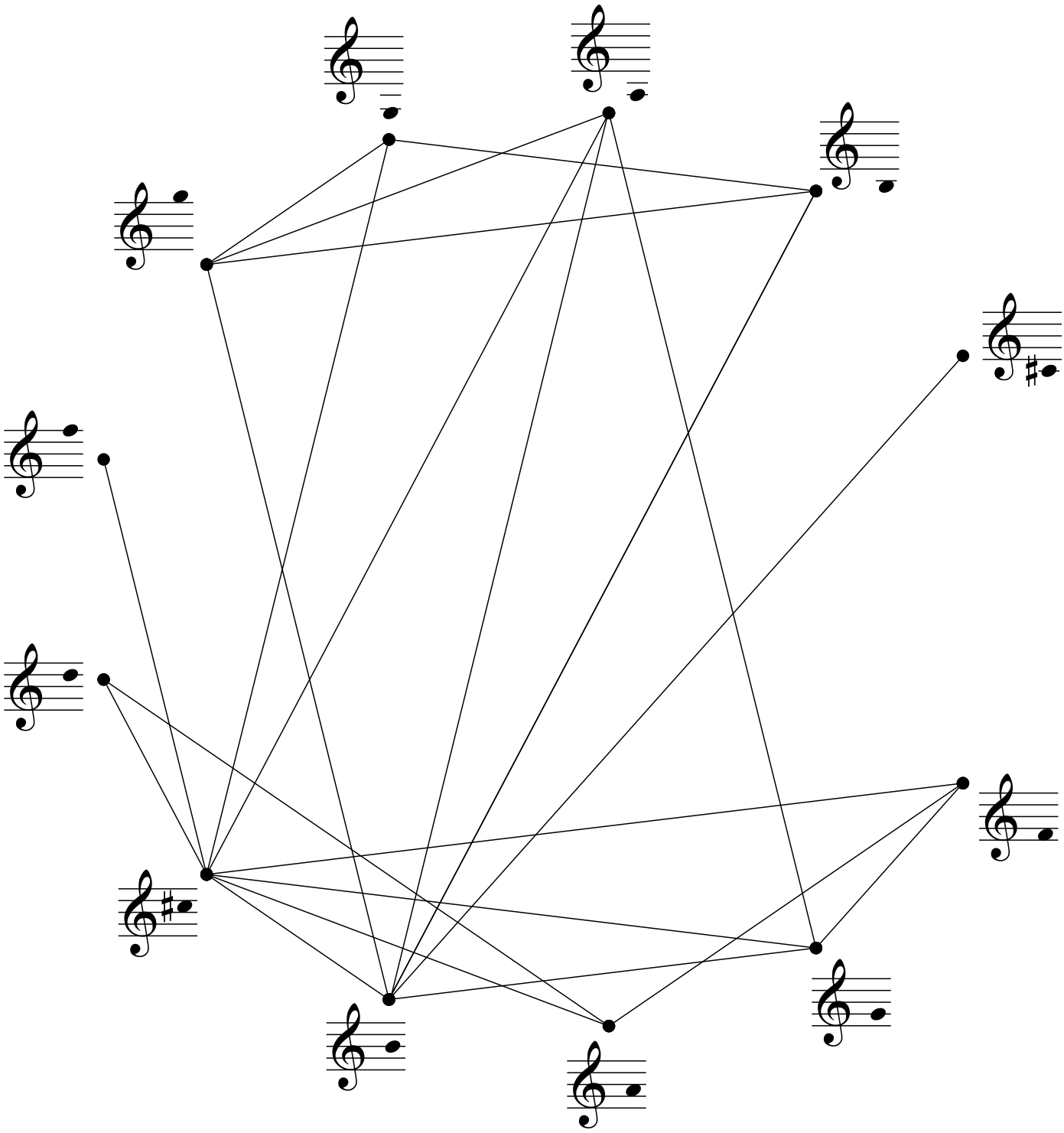


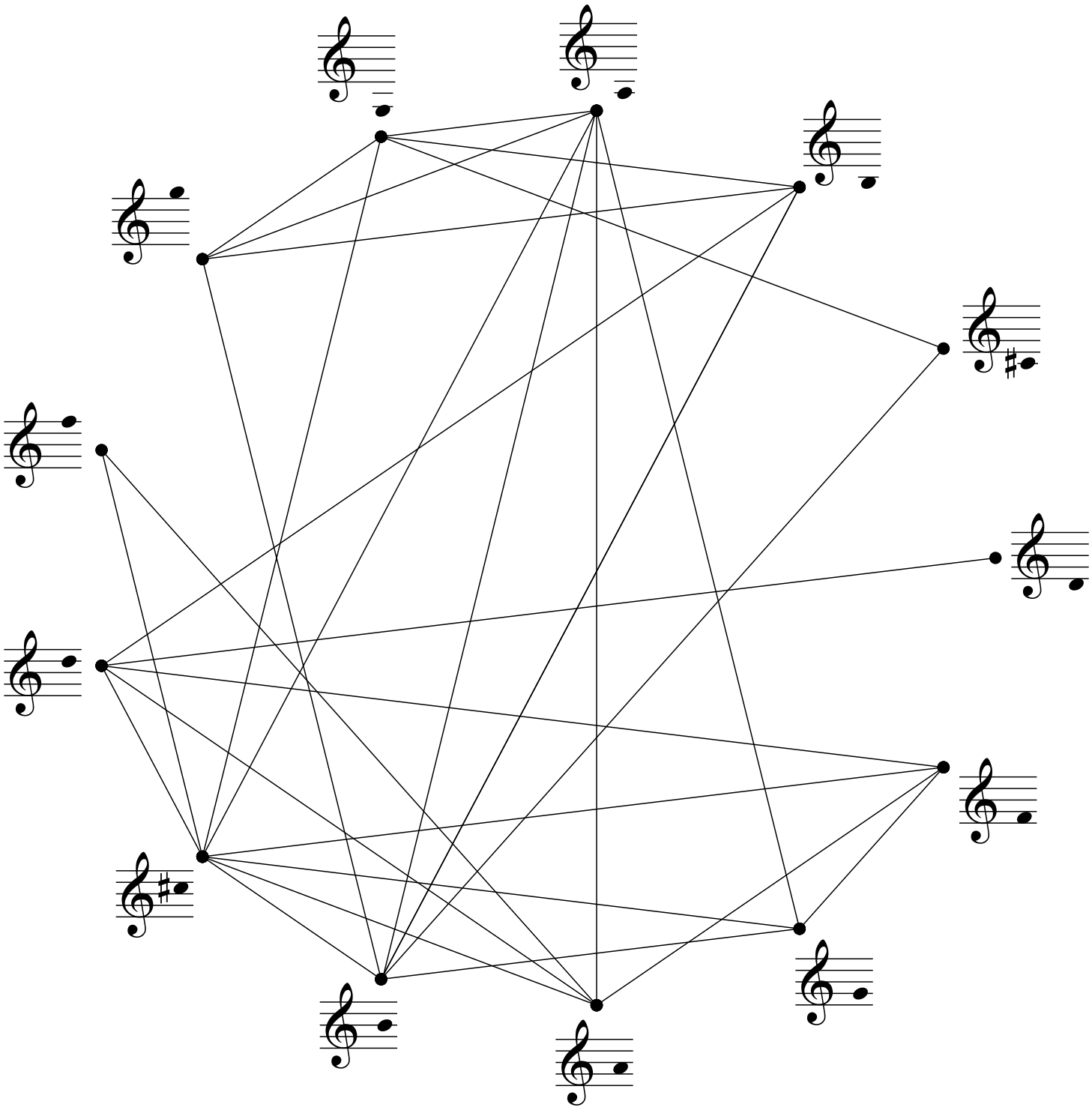


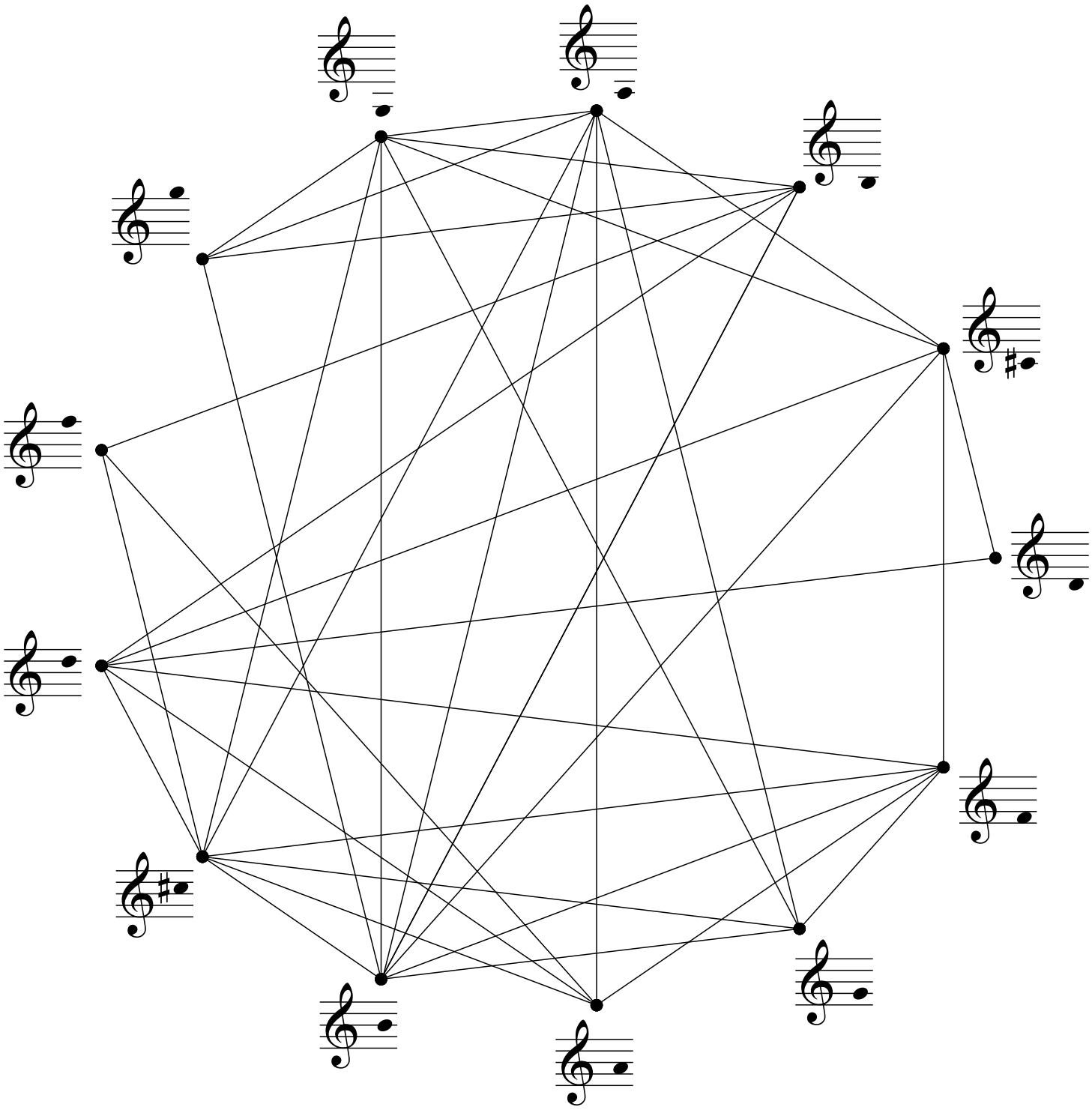


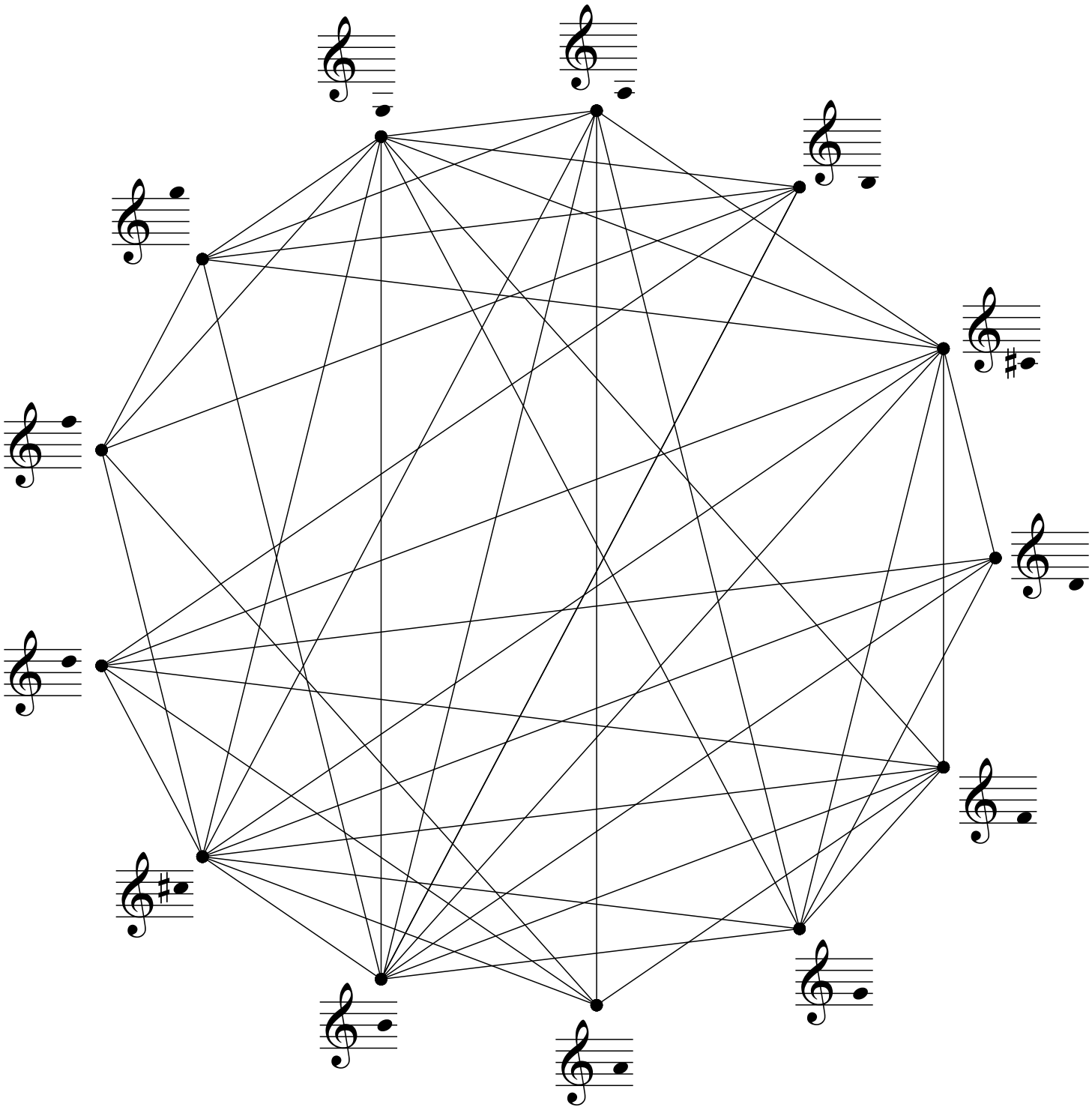


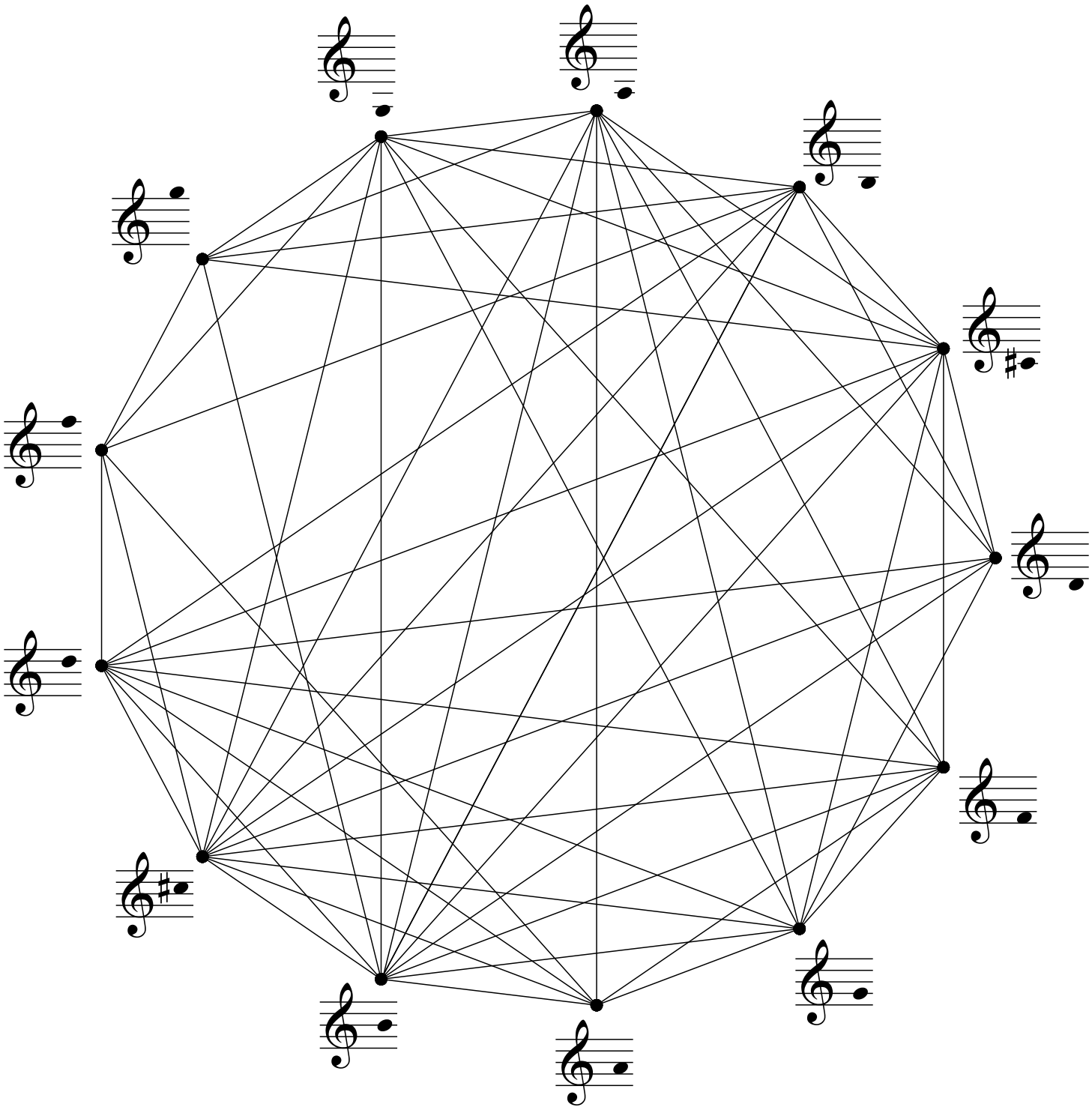


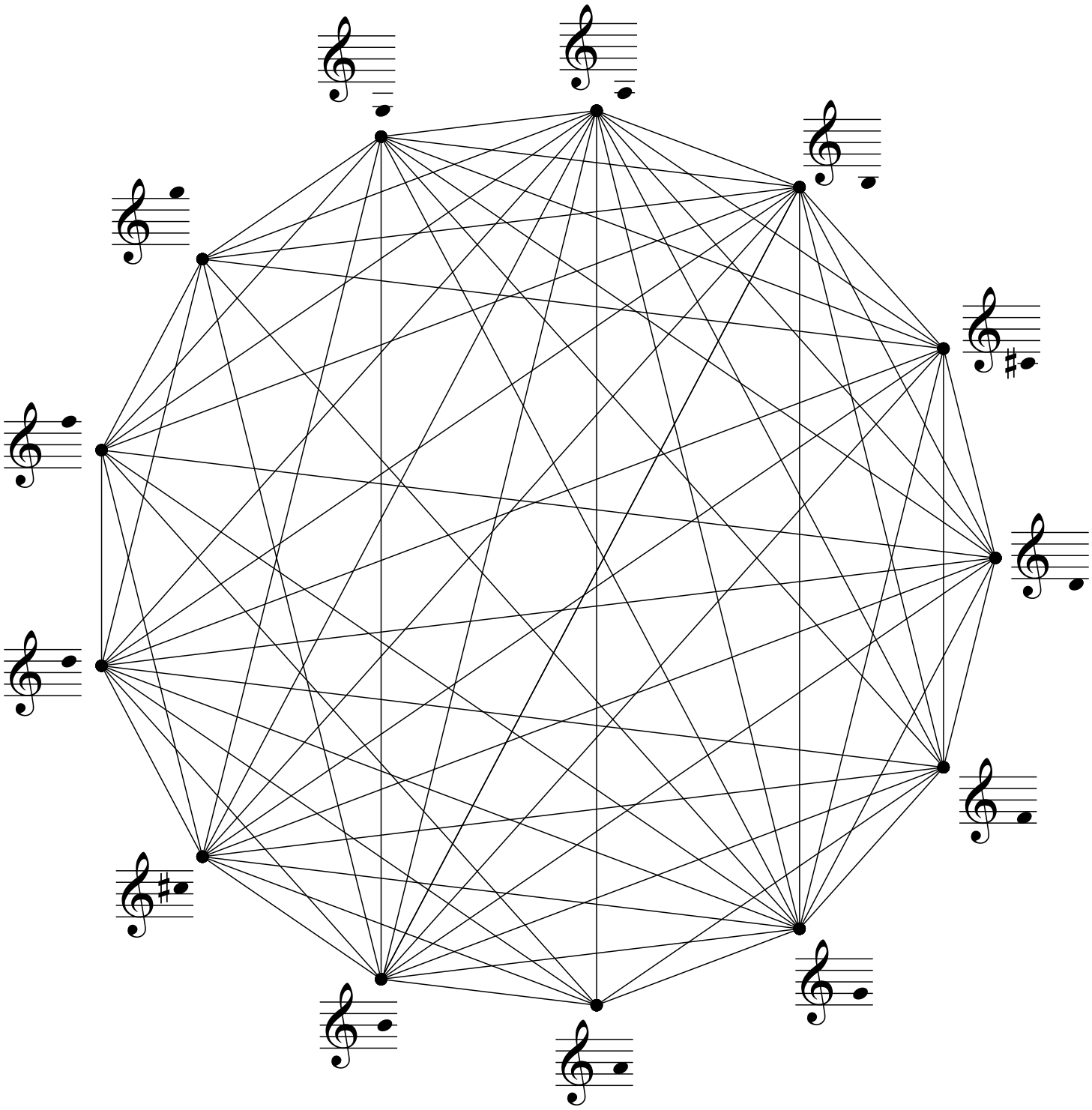


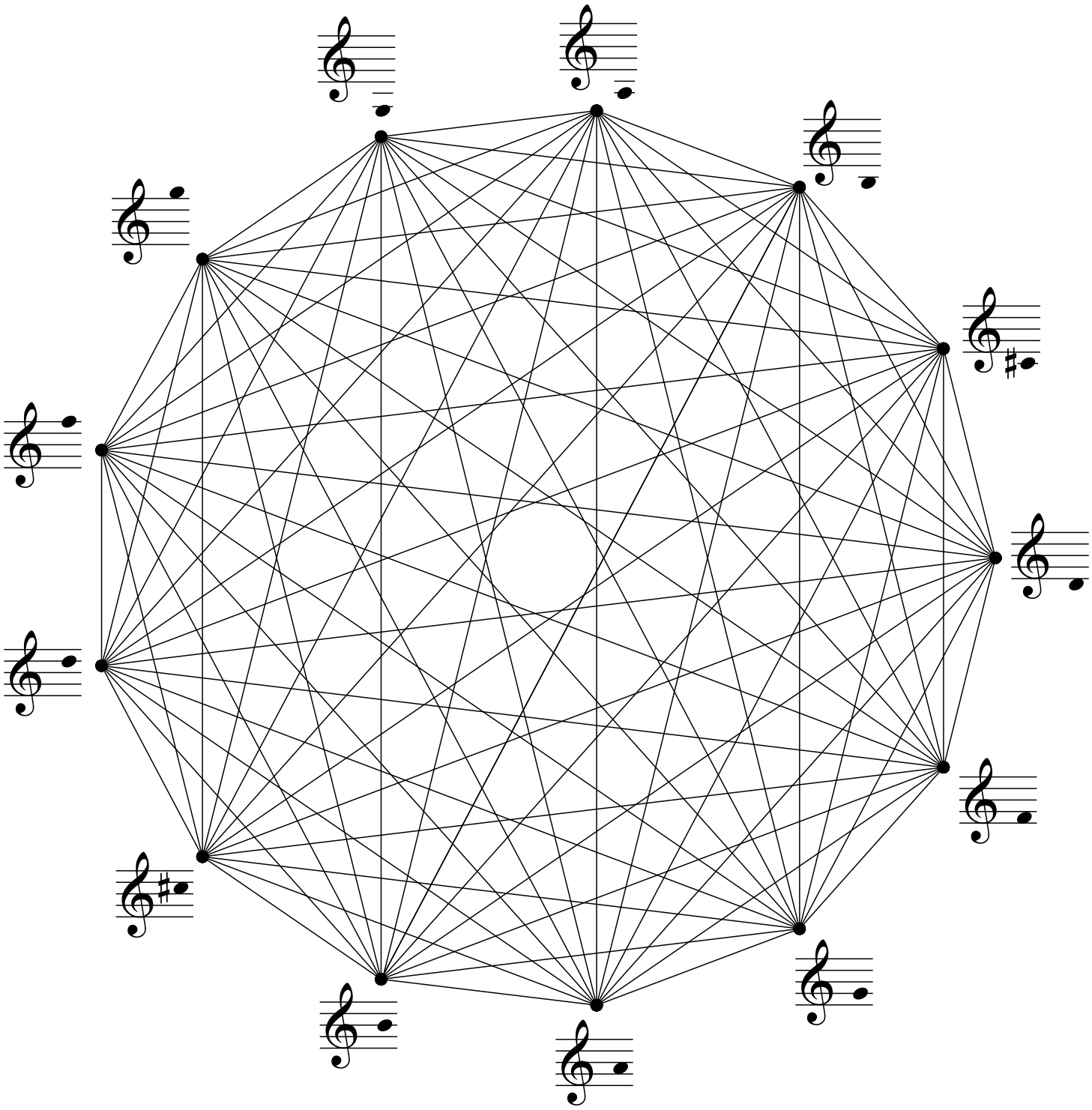








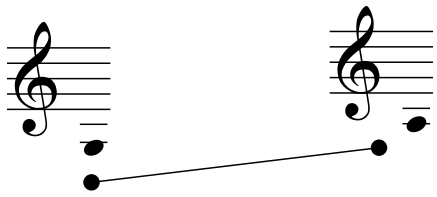




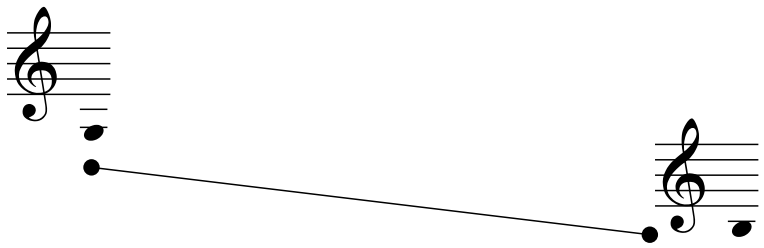
towards completeness

transparencies

mike winter (2008)

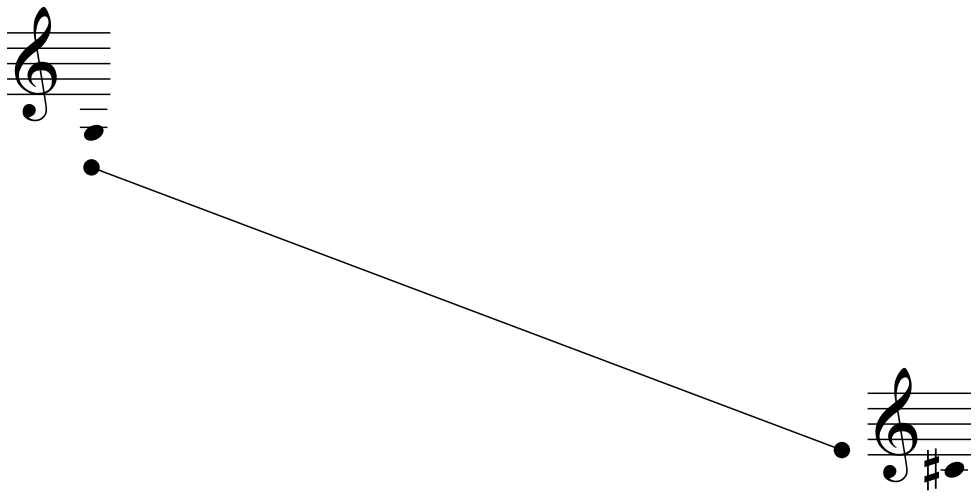


next possible edges:
2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23



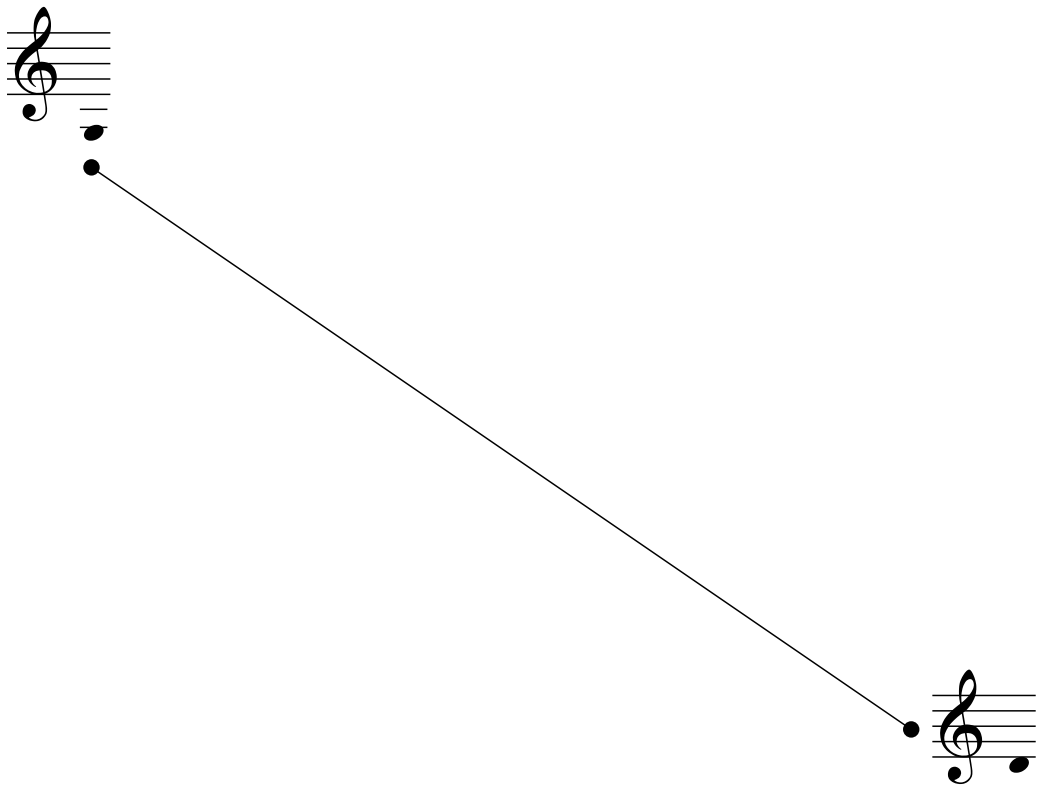
next possible edges:
1, [redacted] 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33

mbw (2008)



next possible edges:
1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 24,
34, 35, 36, 37, 38, 39, 40, 41, 42

mbw (2008)



next possible edges:
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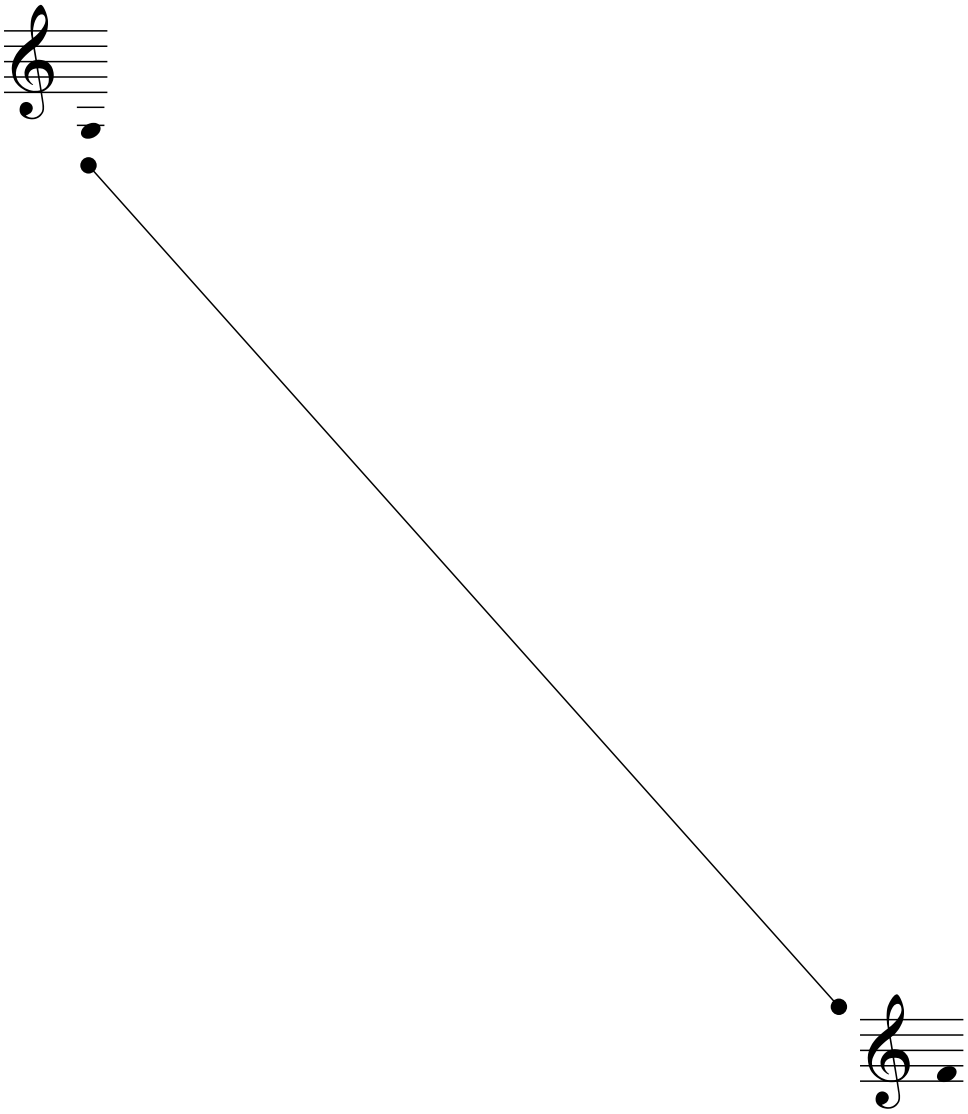
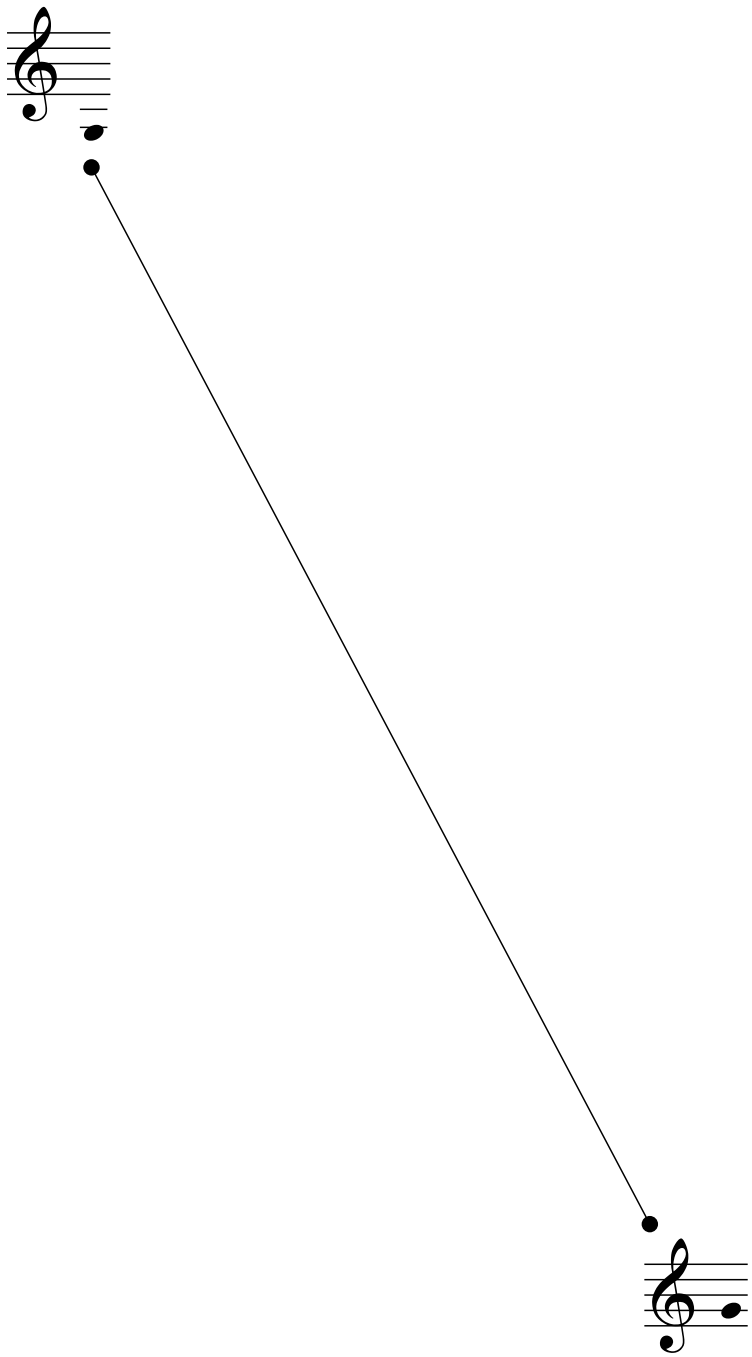
34, 43, 44, 45, 46, 47, 48, 49, 50,

mbw (2008)



next possible edges:
1, 2, 3, 4, [redacted] 6, 7, 8, 9, 10, 11, 12, 16, 26,
35, 43, 51, 52, 53,
54, 55, 56, 57

mbw (2008)



next possible edges:
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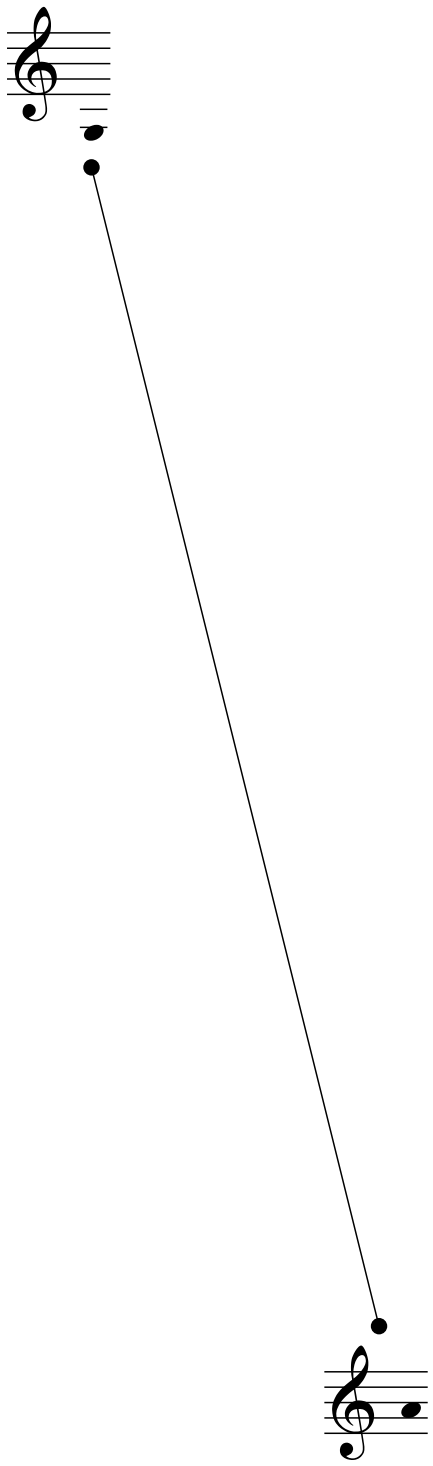
mbw (2008)



next possible edges:
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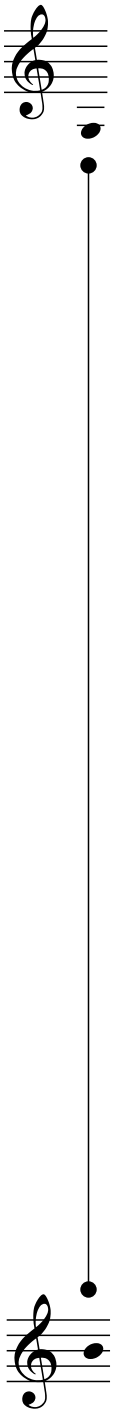
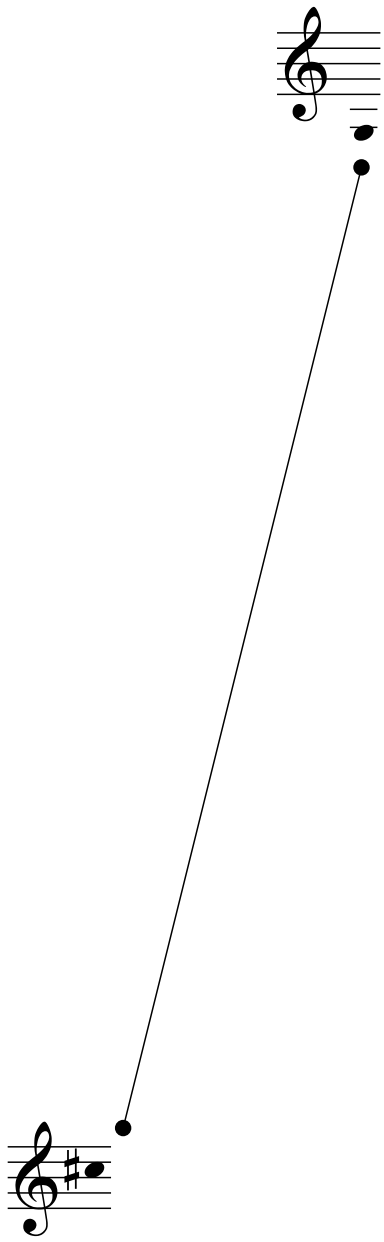
mbw (2008)



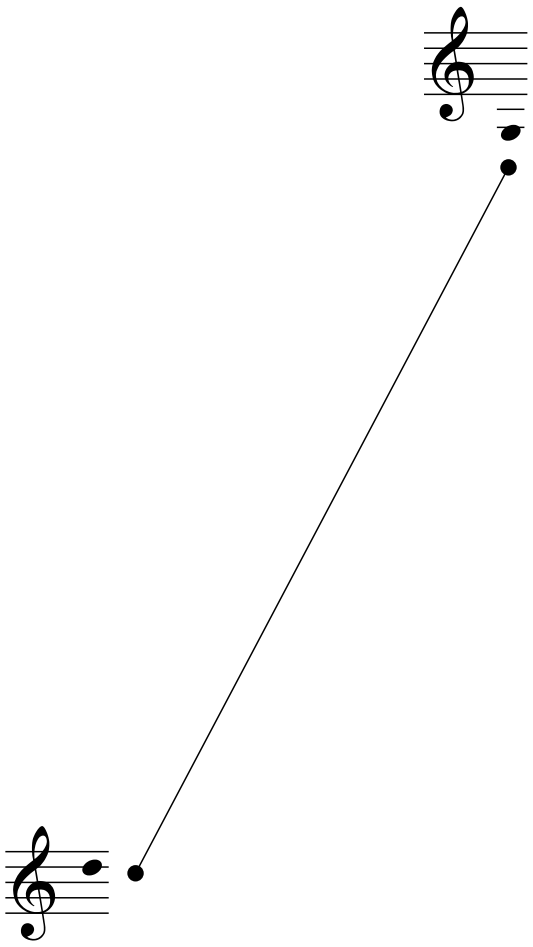
next possible edges:
1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 19,
29, 38, 46, 53,
59, 64, 69, 70, 71, 72

mbw (2008)



next possible edges:
1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 20,
30, 39, 47,
54, 60, 65, 69, 73, 74, 75

mbw (2008)



next possible edges:
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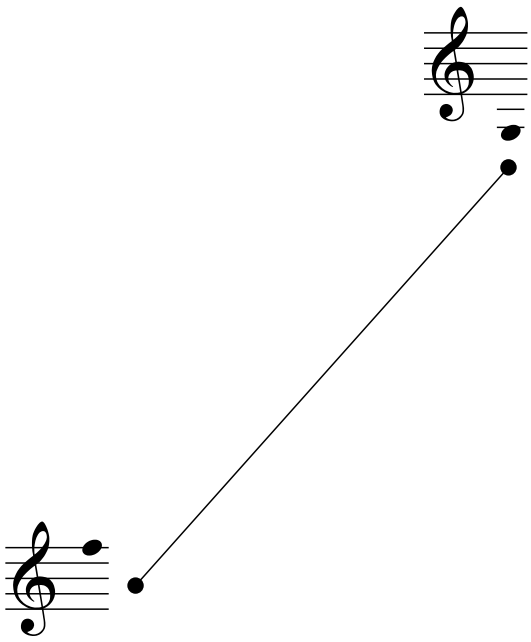
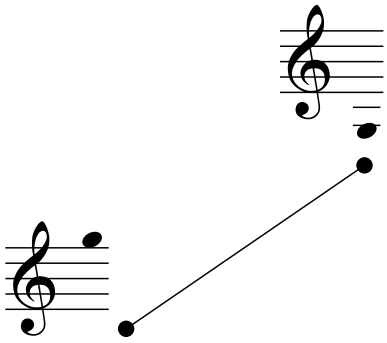
31, 40, 48,
55, 61, 66, 70, 73, 76, 77,

mbw (2008)



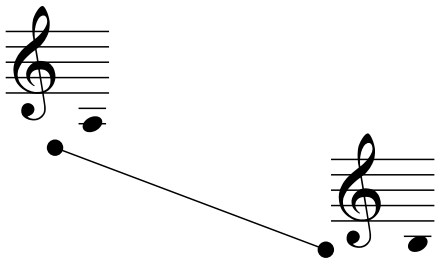
next possible edges:
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ■ 12, 22,
32, 41, 49,
56, 5 62, 67, 71, 74, 76, 78

mbw (2008)



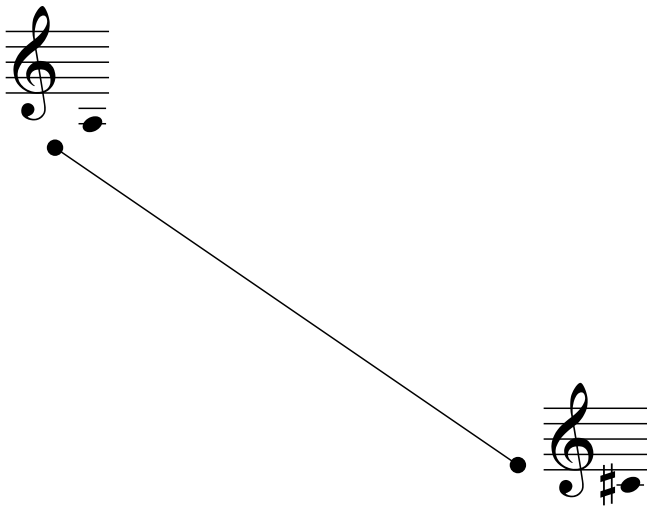
next possible edges:
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, ■ 23,
33, 42, 50,
57, 63, 68, 72, 75, 77, 78

mbw (2008)



next possible edges:
1, 2,
29, 30, 31, 32, 33,

14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28,



next possible edges:
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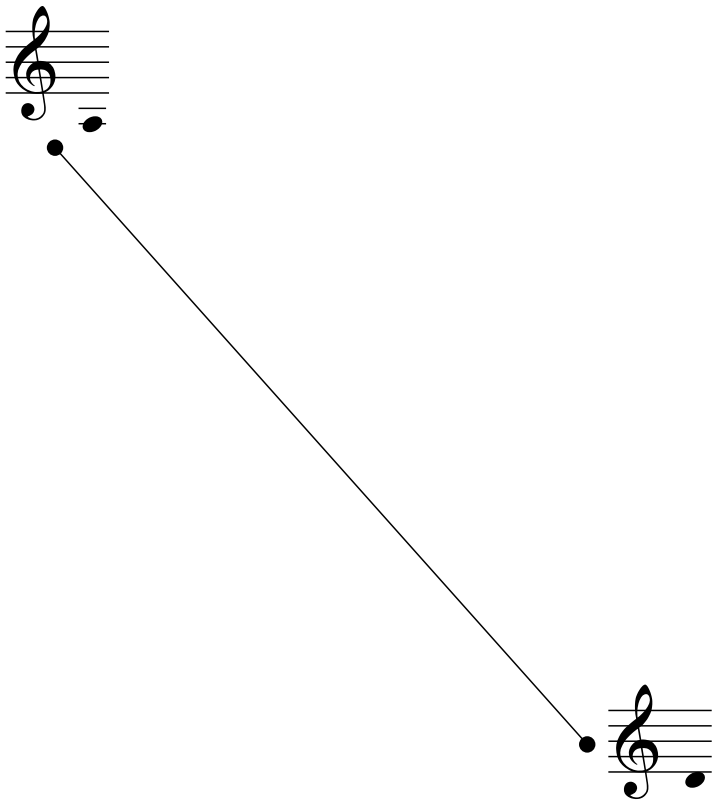
34, 35, 36, 37, 38, 39, 40, 41, 42

mbw (2008)



next possible edges:
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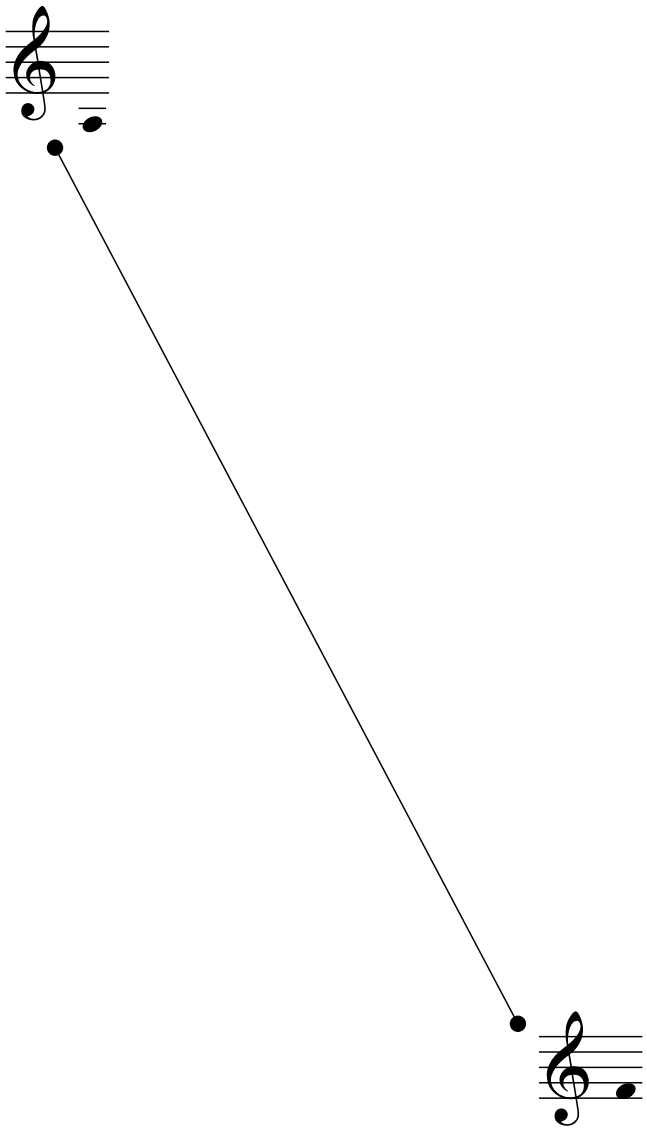
34, 43, 44, 45, 46, 47, 48, 49, 50

mbw (2008)



next possible edges:
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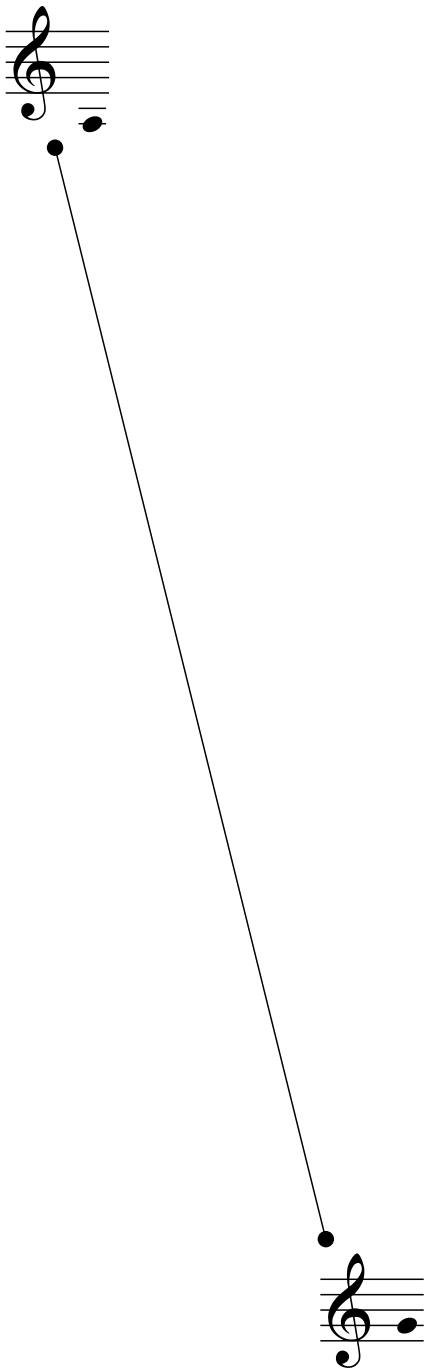
mbw (2008)



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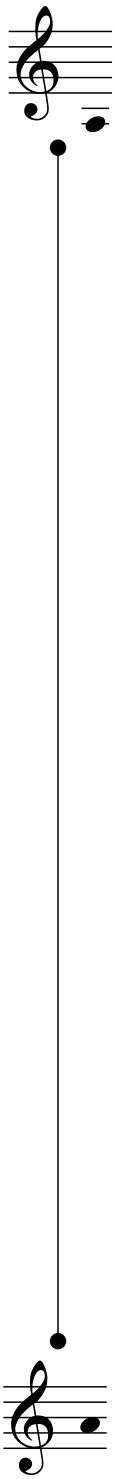
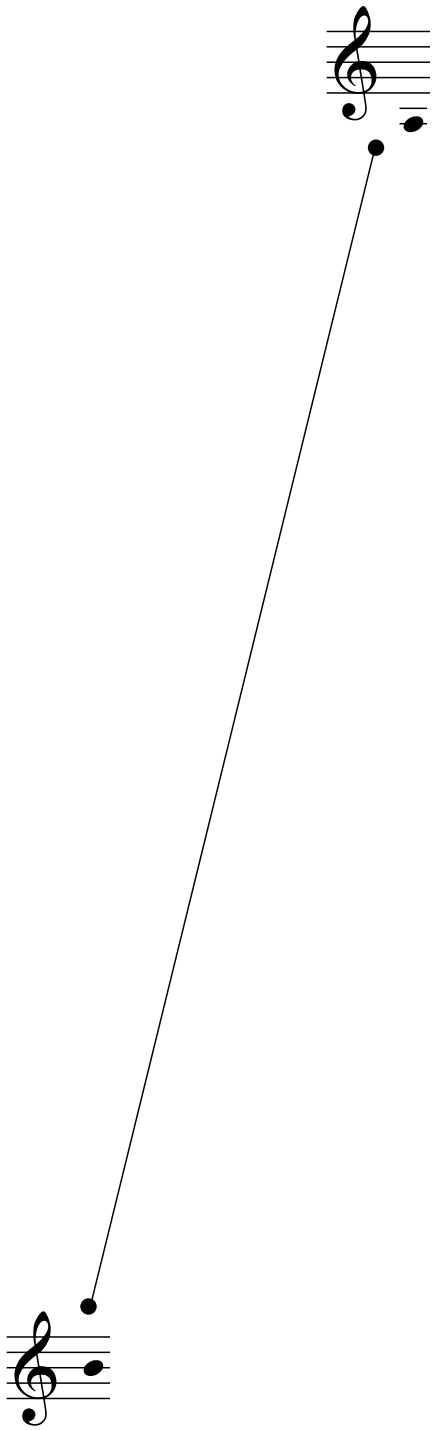
mbw (2008)



next possible edges:
1, 7 13, 14, 15, 16, 17, ■ 19, 20, 21, 22, 23, 28,
37, 45, 52,
58, 64, 65, 66, 67, 68

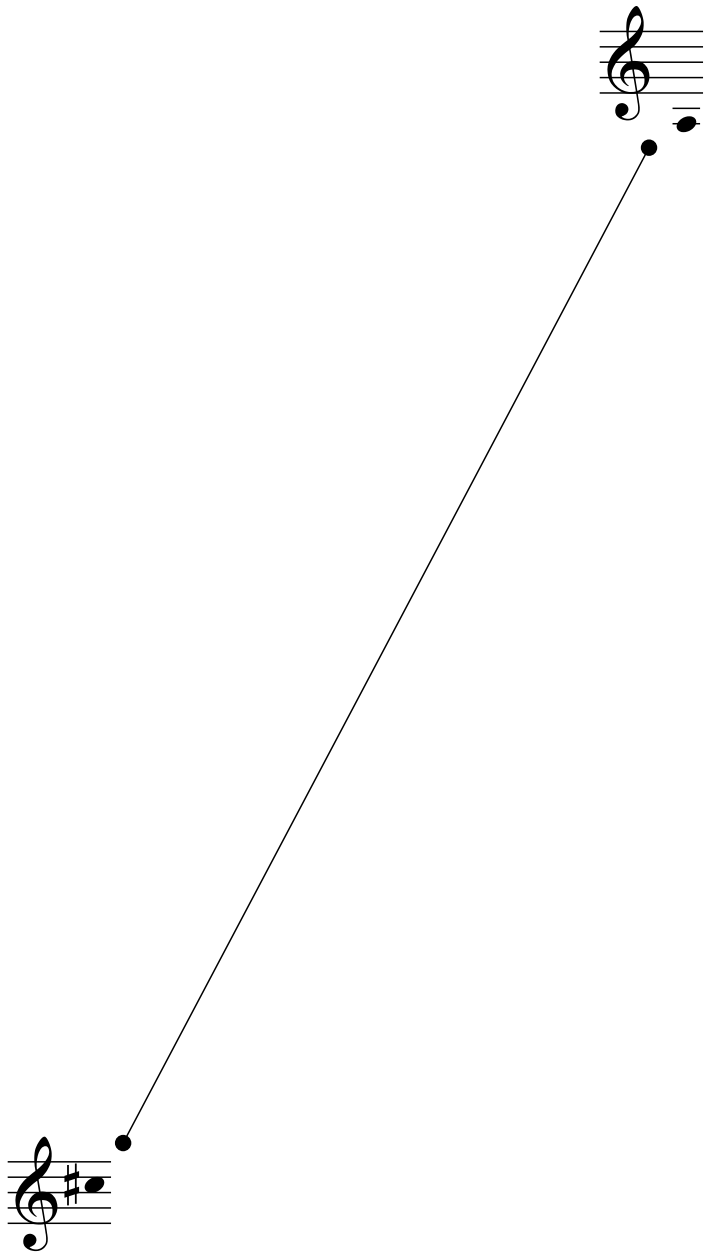
mbw (2008)



next possible edges:

1, 8, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23,
29, 38, 46, 53,
59, 64, 69, 70, 71, 72

mbw (2008)



next possible edges:
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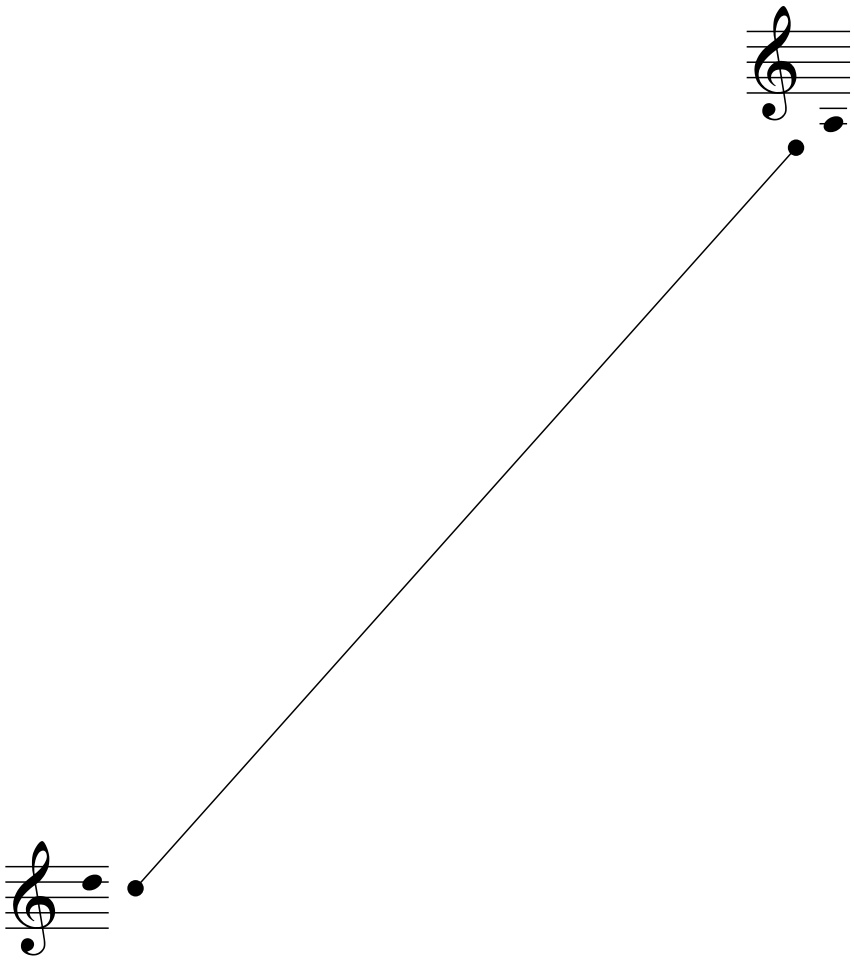
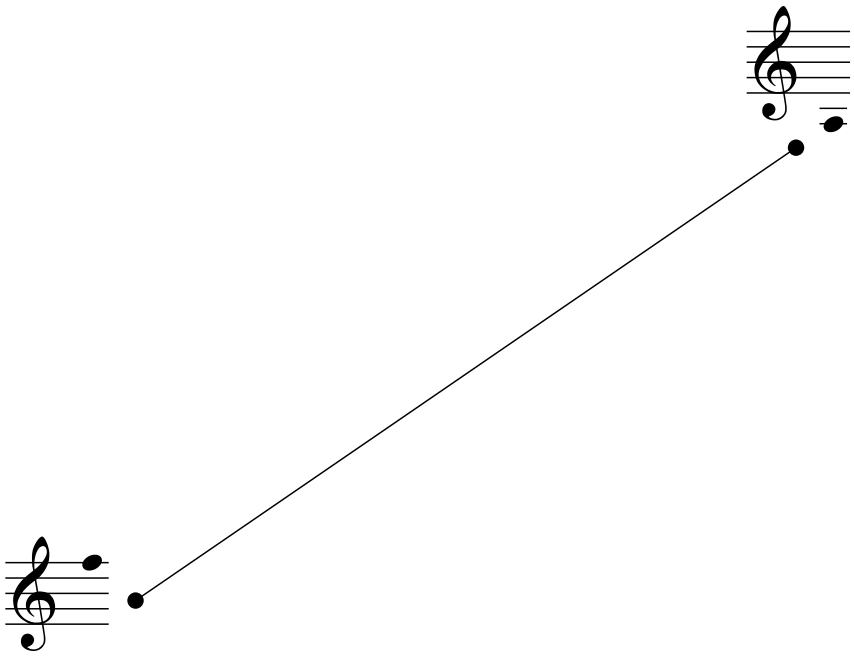
mbw (2008)



next possible edges:
1, 10, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23,
31, 40, 48,
55, 61, 66, 70, 73, 76, 77

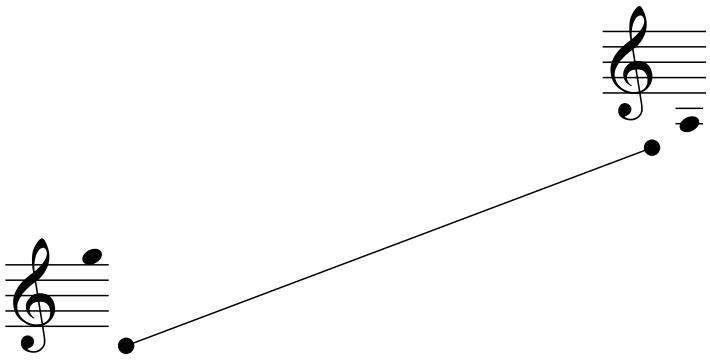
mbw (2008)



next possible edges:

1, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23,
32, 41, 49,
56, 62, 67, 71, 74, 76, 78

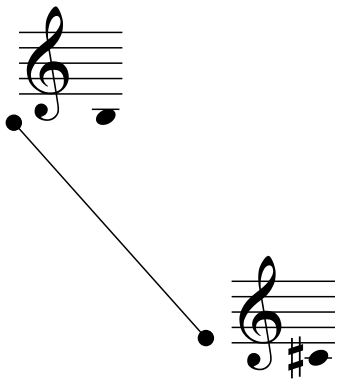
mbw (2008)



next possible edges:

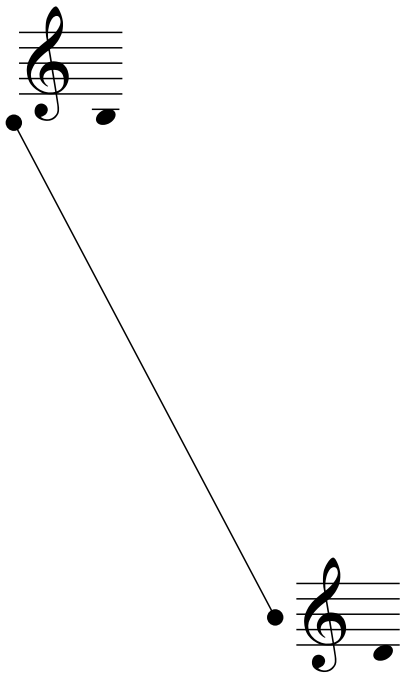
1, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, ■
33, 42, 50,
57, 63, 68, 72, 75, 77, 78

mbw (2008)



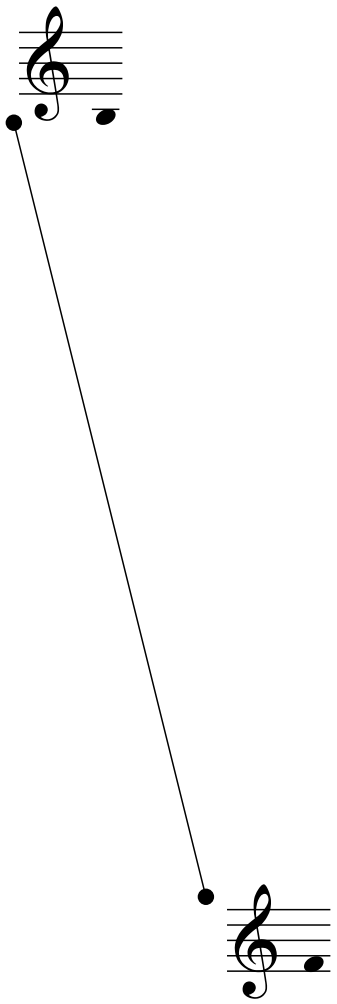
next possible edges:
2, 3, 13, 14, 25, 26, 27, 28,
29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42

mbw (2008)



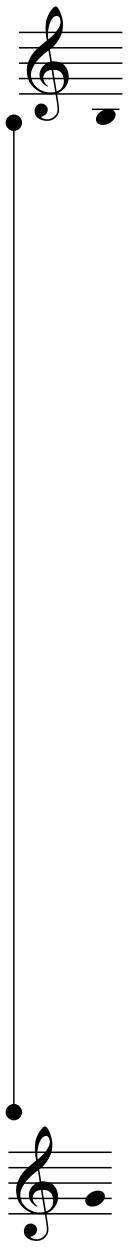
next possible edges:
2, 4, 13, 15, 24, 26, 27, 28,
29, 30, 31, 32, 33, 34, 43, 44, 45, 46, 47, 48, 49, 50

mbw (2008)



next possible edges:
2, 5, 13, 16, 24, 25, 27, 28,
29, 30, 31, 32, 33, 35, 43, 51, 52, 53,
54, 55, 56, 57

mbw (2008)



next possible edges:
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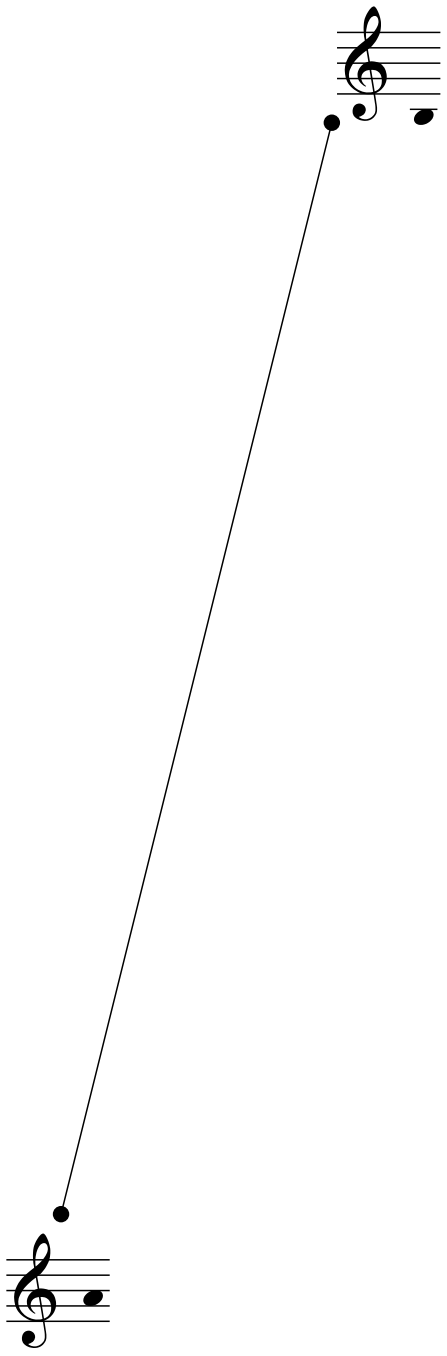
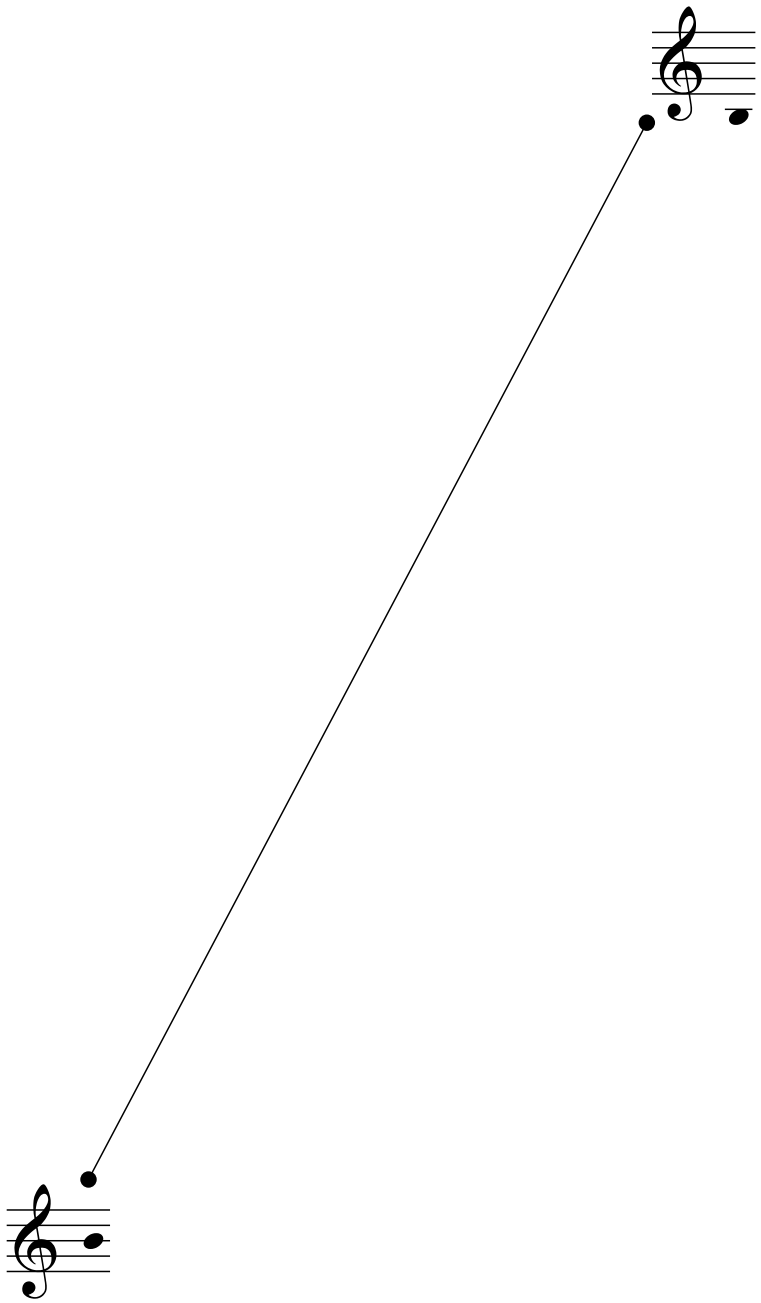
mbw (2008)



next possible edges:
2, 7, 13, 18, 24, 25, 26, 27, ■
29, 30, 31, 32, 33, 37, 45, 52,
58, 64, 65, 66, 67, 68

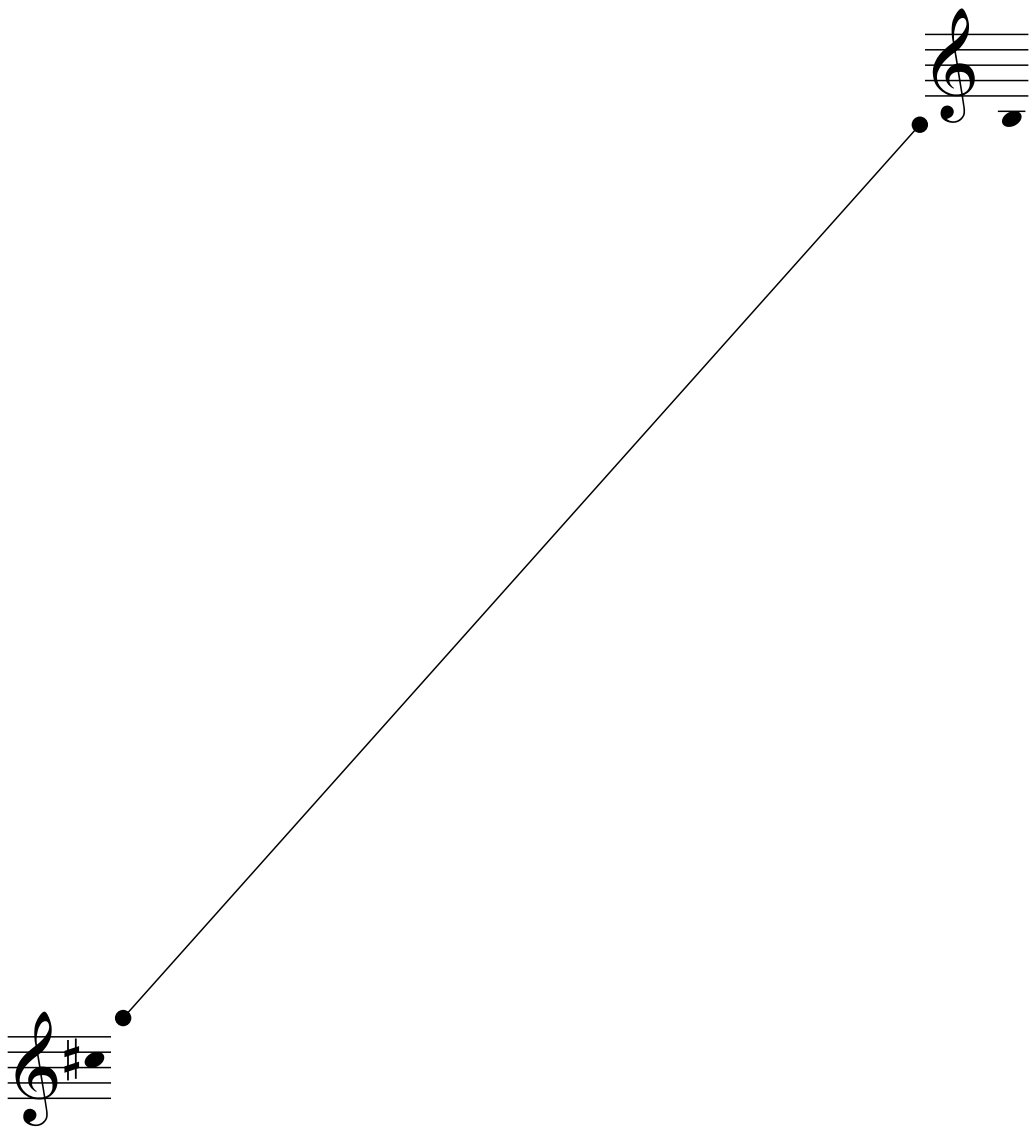
mbw (2008)



next possible edges:

2, 8, 13, 19, 24, 25, 26, 27, 28,
30, 31, 32, 33, 38, 46, 53,
59, 64, 69, 70, 71, 72

mbw (2008)



next possible edges:
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29, [redacted] 31, 32, 33 39, 47,
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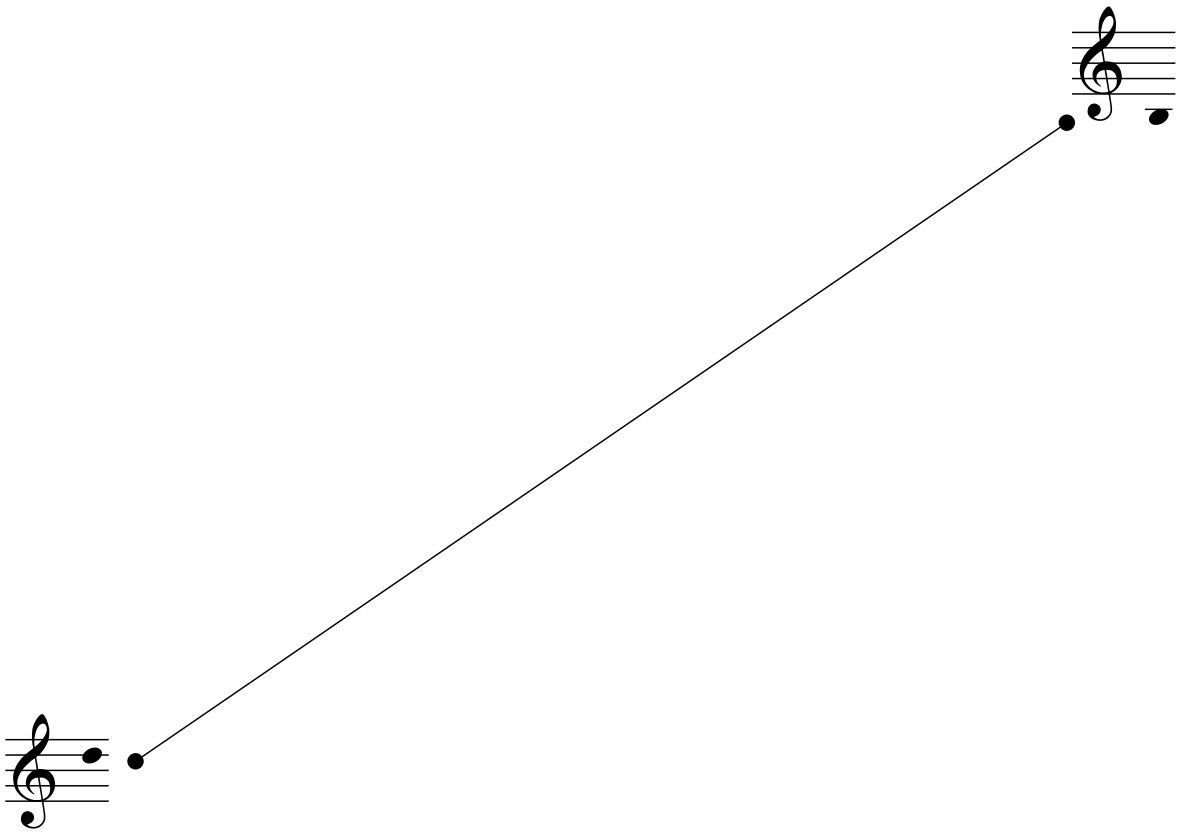
mbw (2008)



next possible edges:
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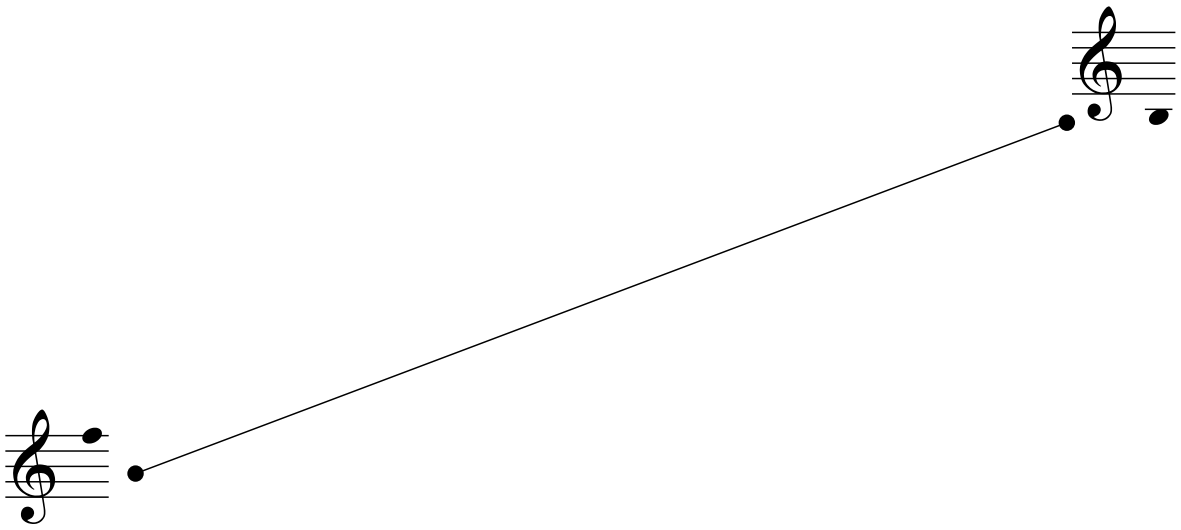
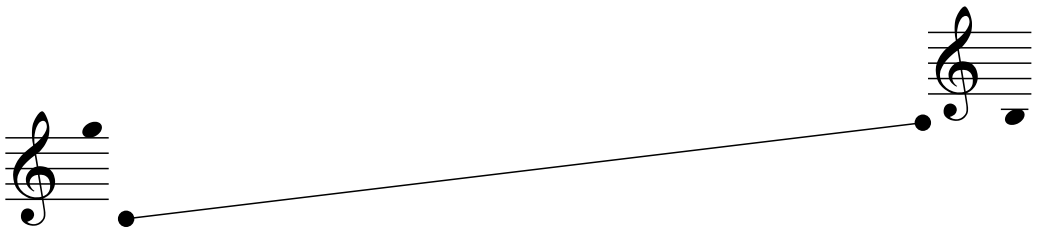
mbw (2008)



next possible edges:
2, 11, 13, 22, 24, 25, 26, 27, 28,
29, 30, 31, ■ 33, 41, 49,
56, 62, 67, 71, 74, 76, 78

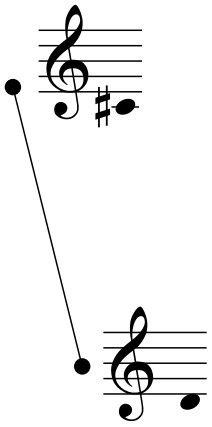
mbw (2008)



next possible edges:

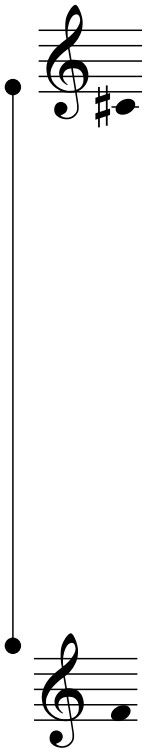
2, 12, 13, 23, 24, 25, 26, 27, 28,
29, 30, 31, 32, ■ 42, 50,
57, 63, 68, 72, 75, 77, 78

mbw (2008)



next possible edges:

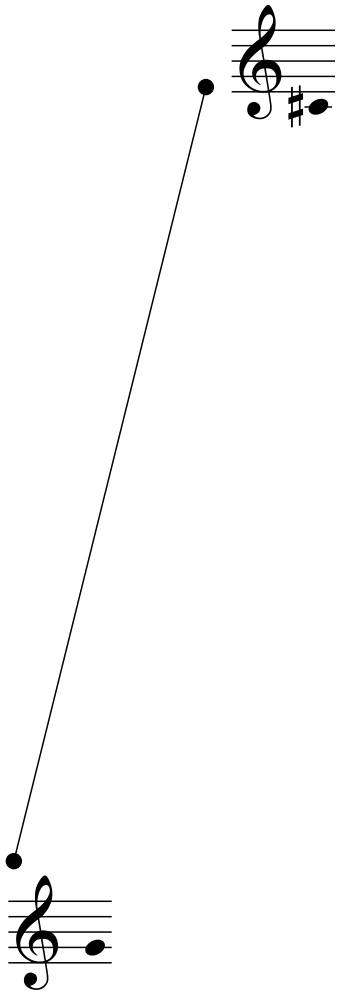
3, 4, 14, 15, 24, 25,
35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50



next possible edges:

3, 5, 14, 16, 24, 26,
34, ■ 36, 37, 38, 39, 40, 41, 42, 43, 51, 52, 53,
54, 55, 56, 57

mbw (2008)



next possible edges:

3, 6, 14, 17, 24, 27,
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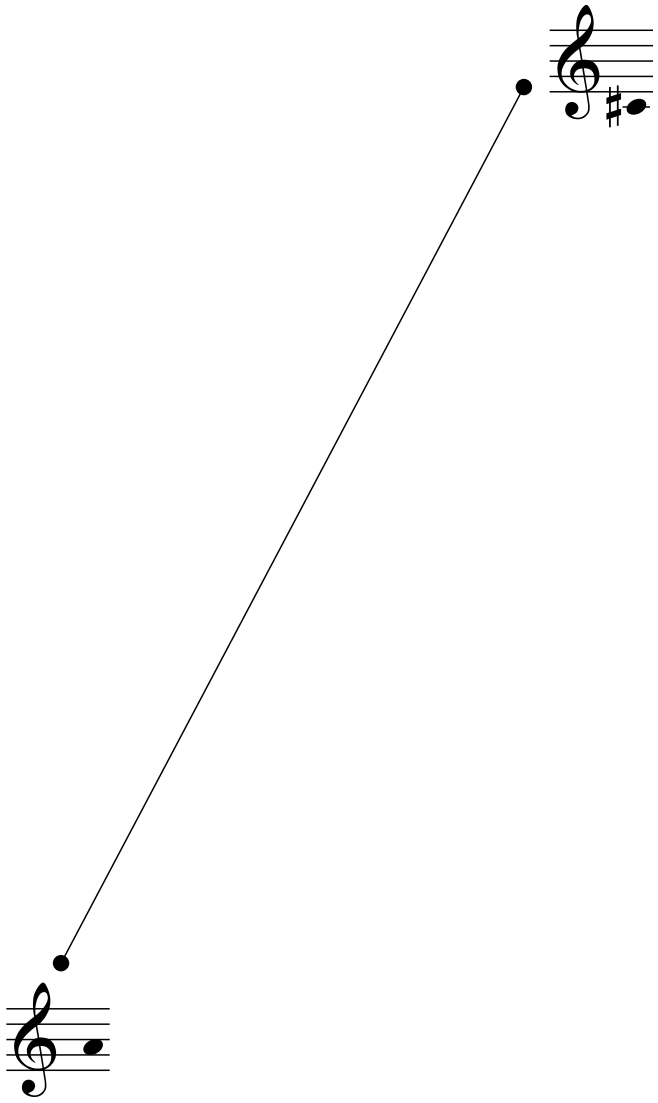
58, 59, 60, 61, 62, 63

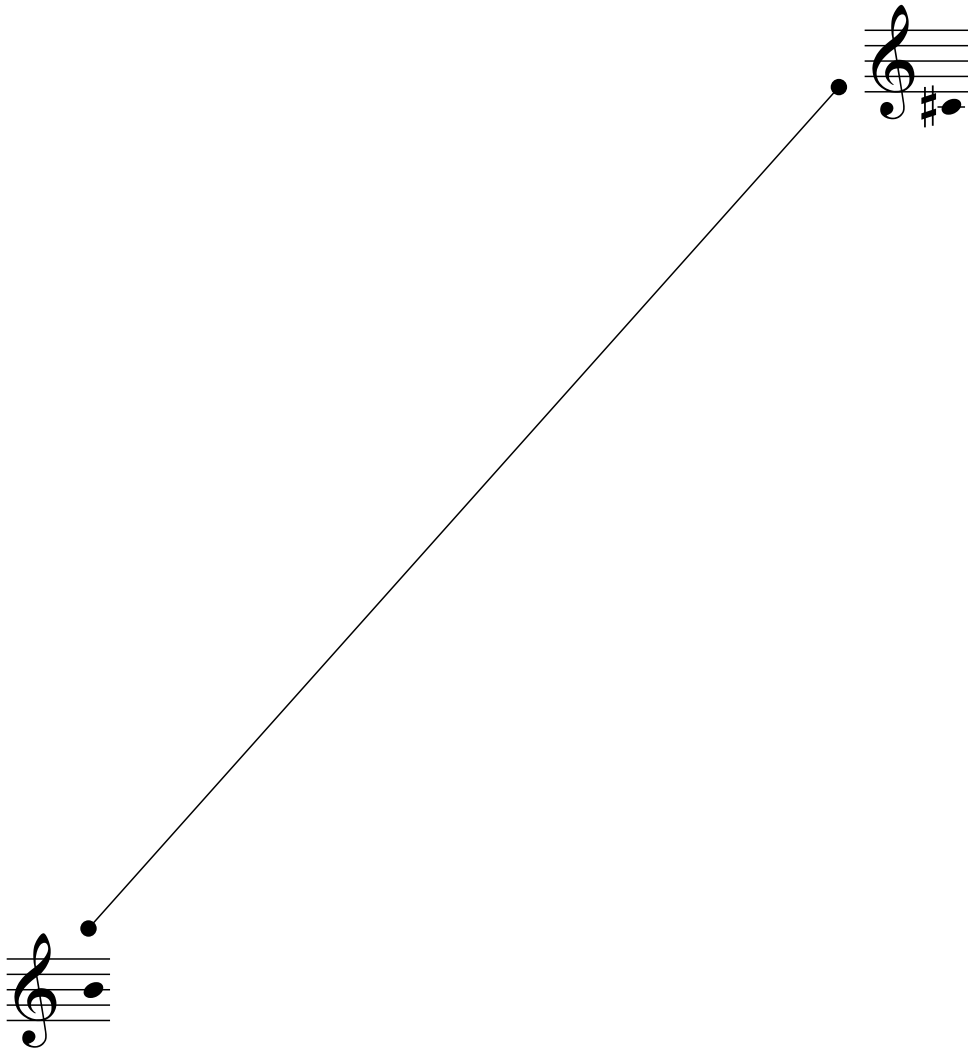
mbw (2008)



next possible edges:

3, 7, 14, 18, 24, 28,
34, 35, 36, [redacted] 38, 39, 40, 41, 42 45, 52,
58, 64, 65, 66, 67, 68

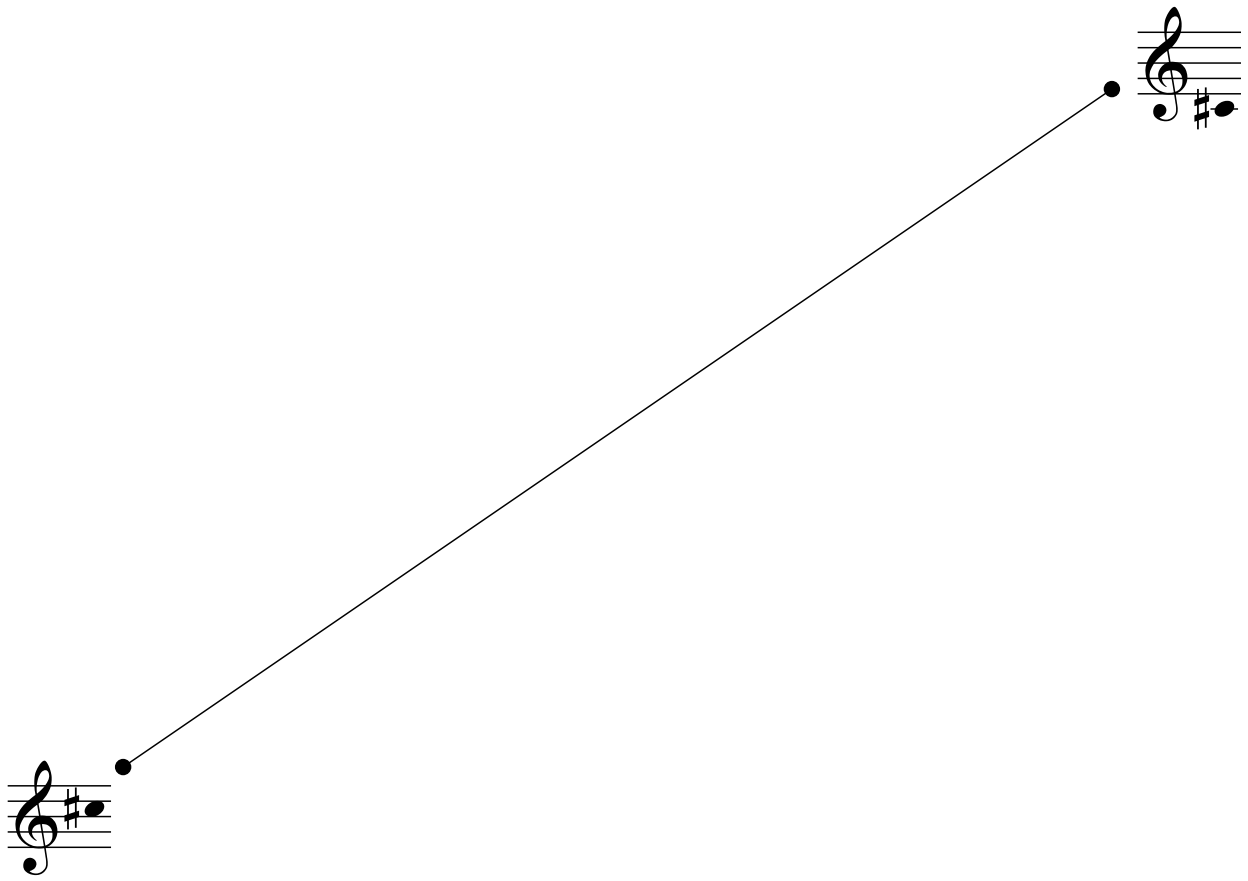
mbw (2008)



next possible edges:

3, 8, 14, 19, 24,
29, 34, 35, 36, 37, [redacted] 39, 40, 41, 42, 46, 53,
59, 64, 69, 70, 71, 72

mbw (2008)



next possible edges:

3, 9, 14, 20, 24,
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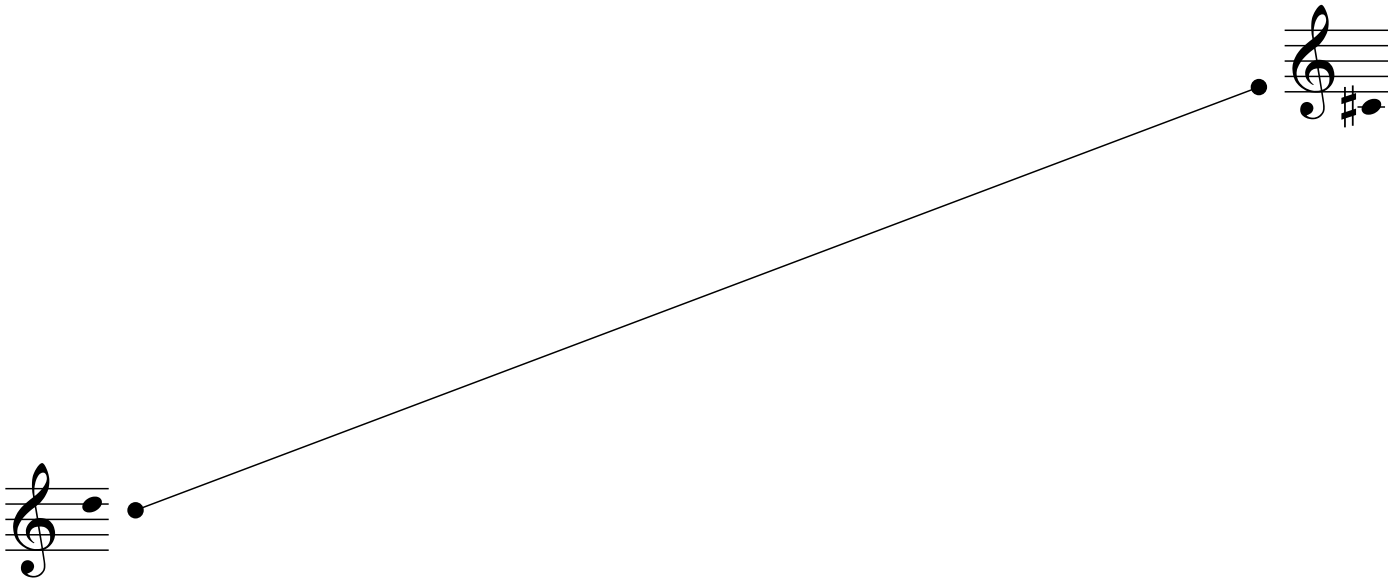
54, 60, 65, 69, 73, 74, 75

mbw (2008)



next possible edges:

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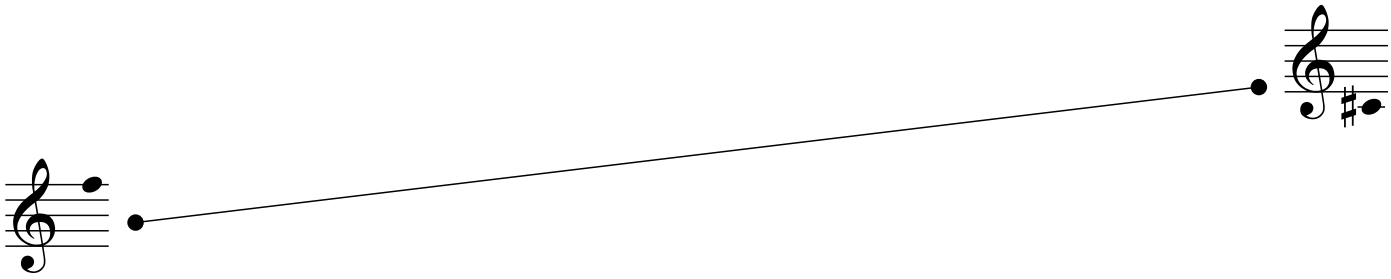
55, 61, 66, 70, 73, 76, 77

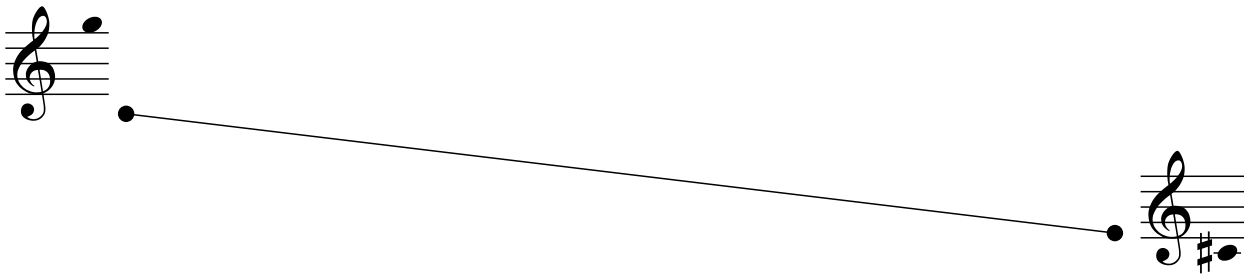
mbw (2008)



next possible edges:

3, 11, 14, 22, 24,
32, 34, 35, 36, 37, 38, 39, 40, 42, 49,
56, 62, 67, 71, 74, 76, 78

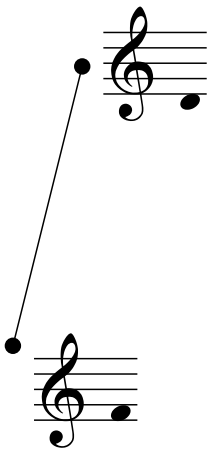
mbw (2008)



next possible edges:

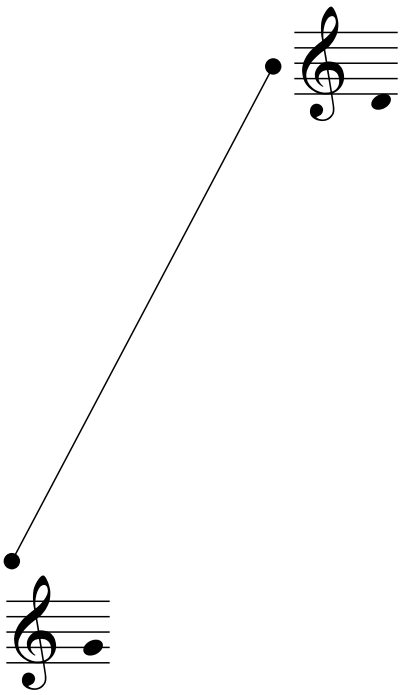
3, 12, 14, 23, 24,
33, 34, 35, 36, 37, 38, 39, 40, 41, ■ 50,
57, 63, 68, 72, 75, 77, 78

mbw (2008)



next possible edges:
4, 5, 15, 16, 25, 26,
34, 35, ■ 44, 45, 46, 47, 48, 49, 50, 51, 52, 53,
54, 55, 56, 57

mbw (2008)



next possible edges:
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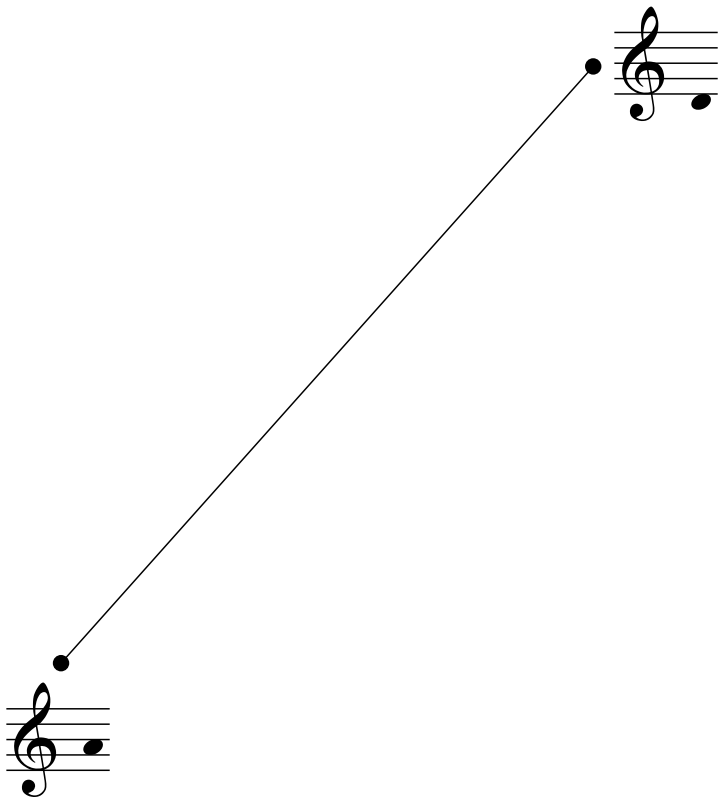
58, 59, 60, 61, 62, 63

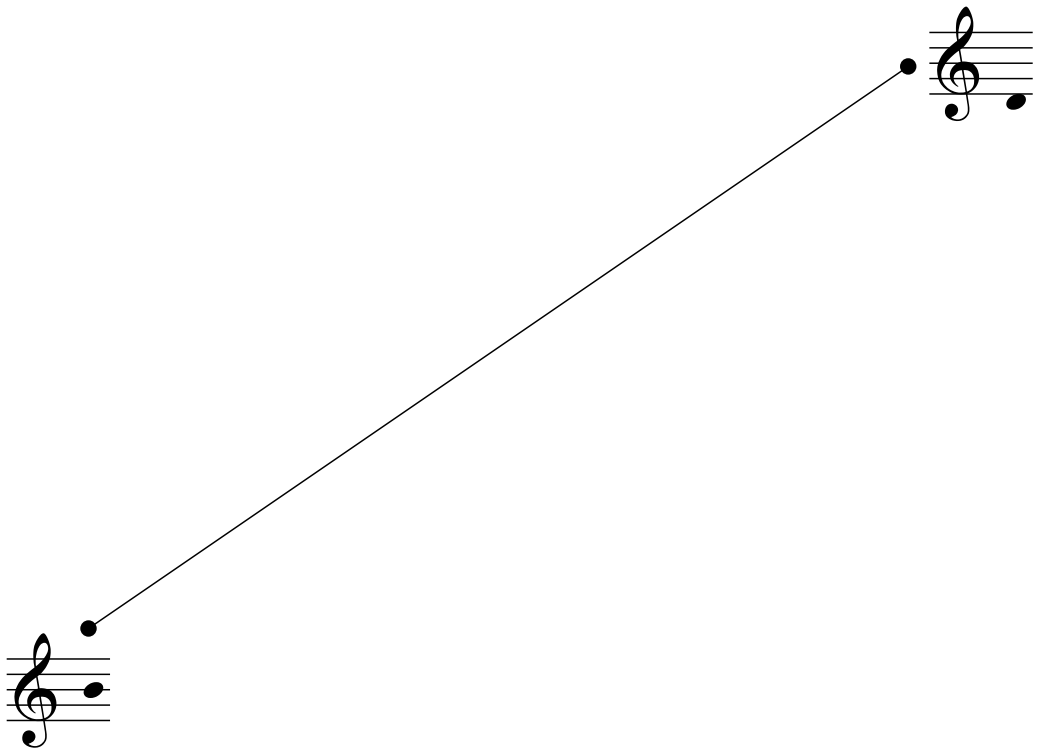
mbw (2008)



next possible edges:

4, 7, 15, 18, 25, 28,
34, 37, 43, 44, 46, 47, 48, 49, 50, 52,
58, 64, 65, 66, 67, 68

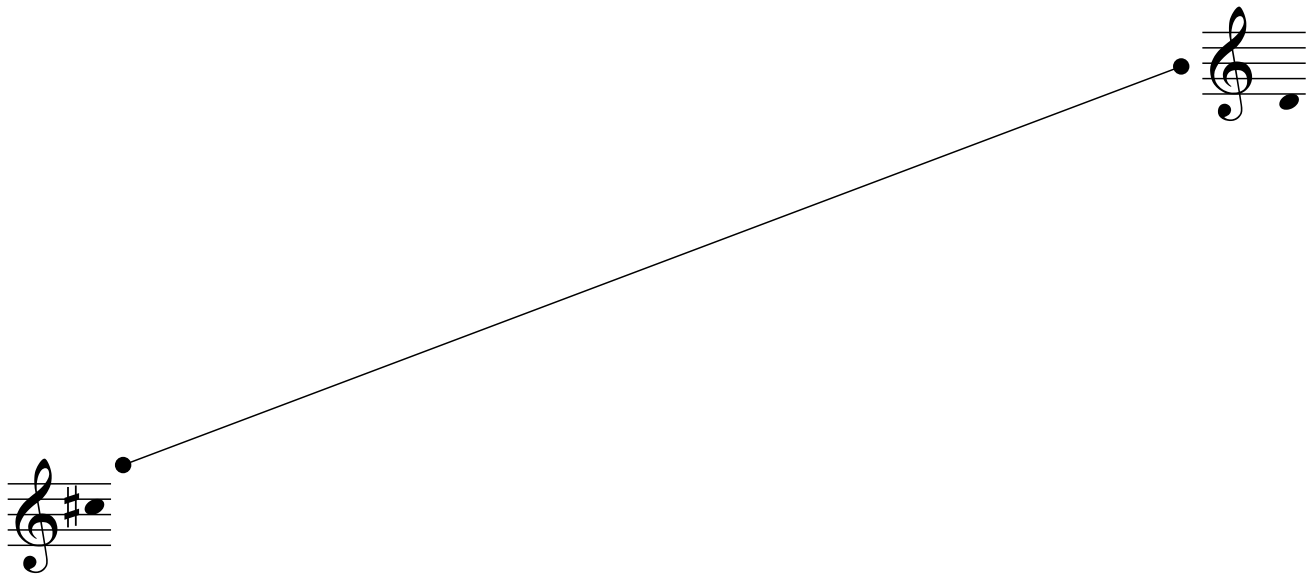
mbw (2008)



next possible edges:

4, 8, 15, 19, 25,
29, 34, 38, 43, 44, 45, 47, 48, 49, 50, 53,
59, 64, 69, 70, 71, 72

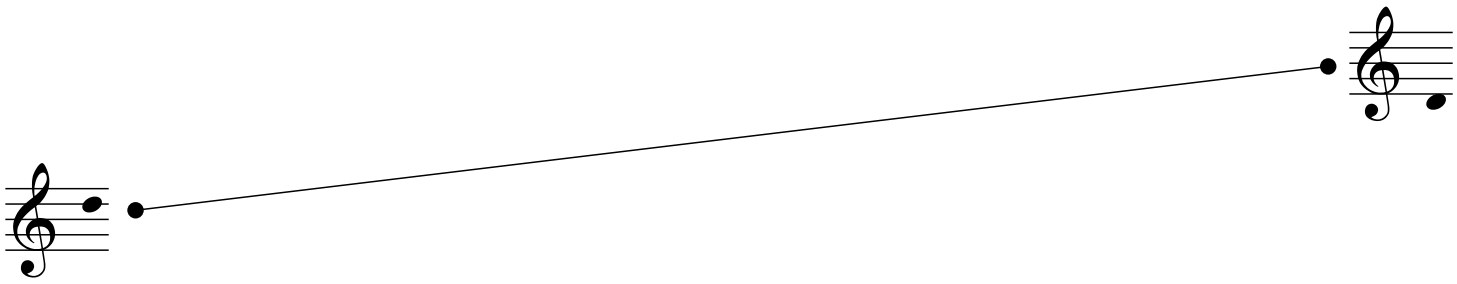
mbw (2008)



next possible edges:

4, 9, 15, 20, 25,
30, 34, 39, 43, 44, 45, 46, 48, 49, 50,
54, 60, 65, 69, 73, 74, 75

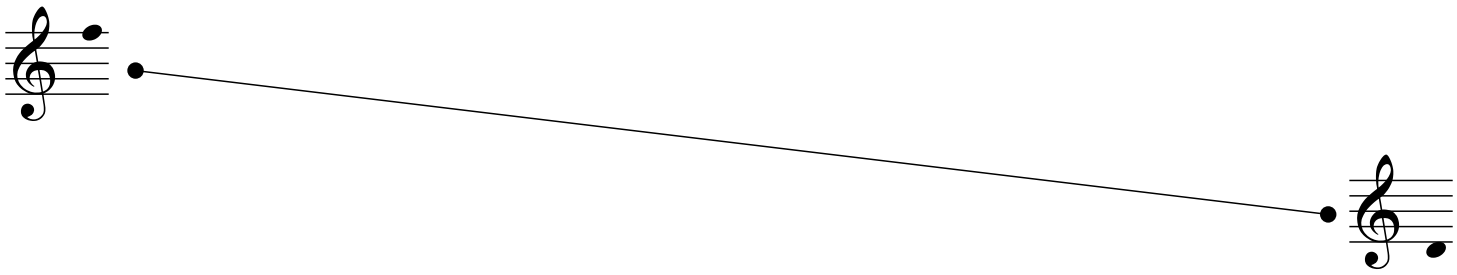
mbw (2008)



next possible edges:

4, 10, 15, 21, 26,
31, 34, 40, 43, 44, 45, 46, 47, 49, 50,
55, 61, 66, 70, 73, 76, 77

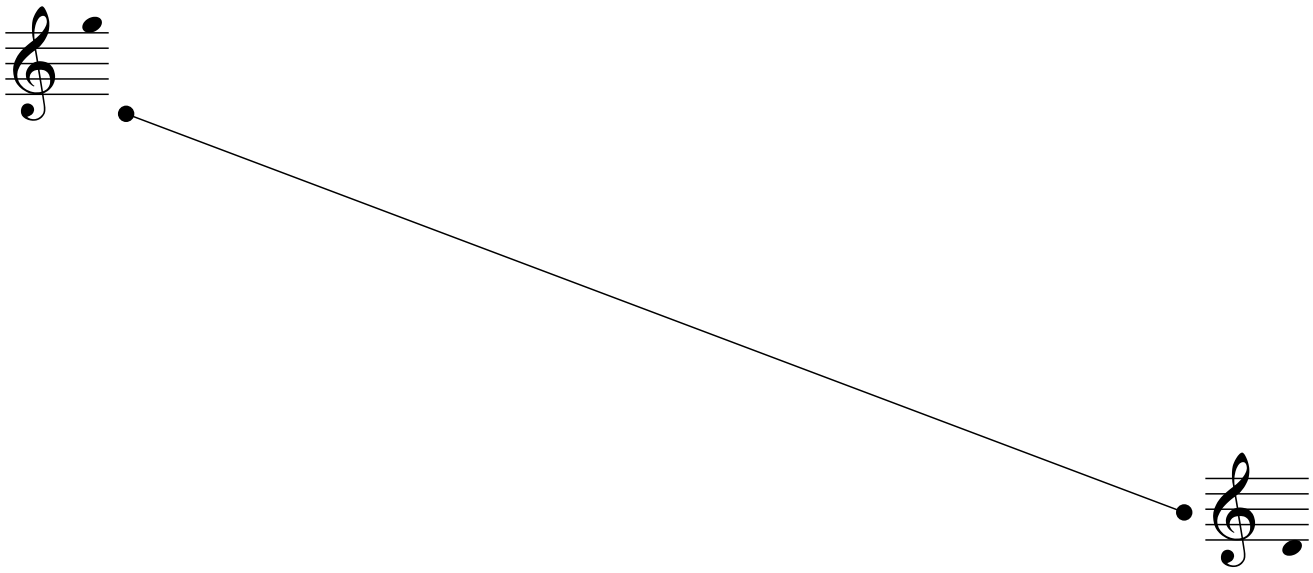
mbw (2008)



next possible edges:

4, 11, 15, 22, 25,
32, 34, 41, 43, 44, 45, 46, 47, 48, 50
56, 62, 67, 71, 74, 76, 78

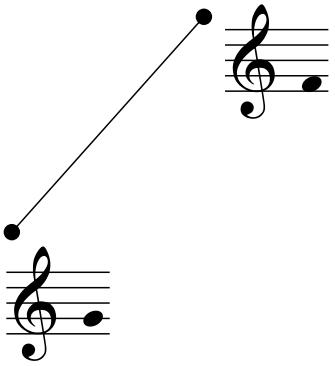
mbw (2008)



next possible edges:

4, 12, 15, 23, 25,
33, 34, 42, 43, 44, 45, 46, 47, 48, 49, ■
57, 63, 68, 72, 75, 77, 78

mbw (2008)



next possible edges:

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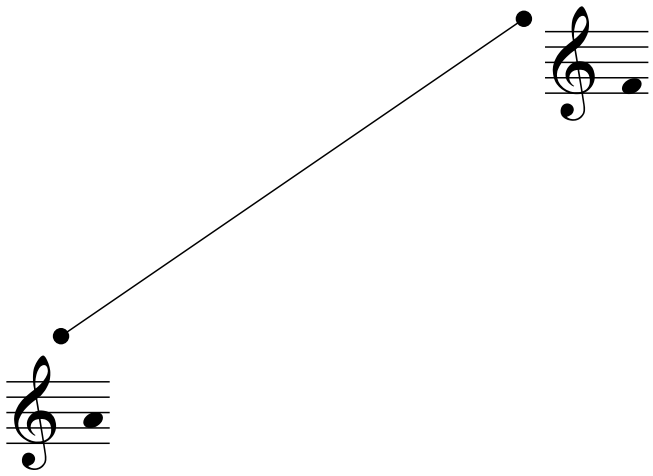
35, 36, 43, 44, 52, 53,
54, 55, 56, 57, 58, 59, 60, 61, 62, 63

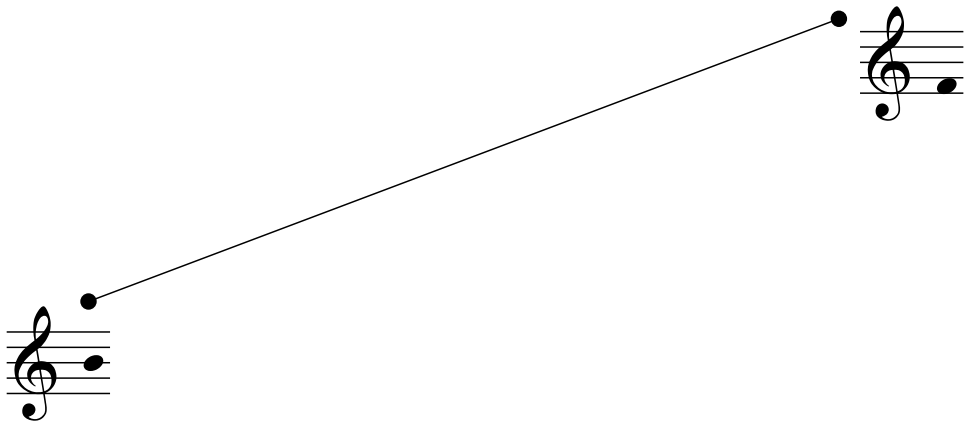
mbw (2008)



next possible edges:

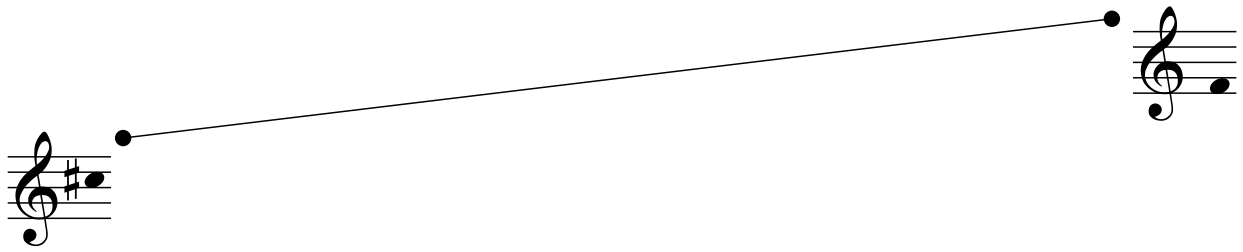
5, 7, 16, 18, 26, 28,
35, 37, 43, 45, 51, 53,
54, 55, 56, 57, 58, 64, 65, 66, 67, 68

mbw (2008)



next possible edges:
5, 8, 16, 19, 26,
29, 35, 38, 43, 46, 51, 52, ■
54, 55, 56, 57, 59, 64, 69, 70, 71, 72

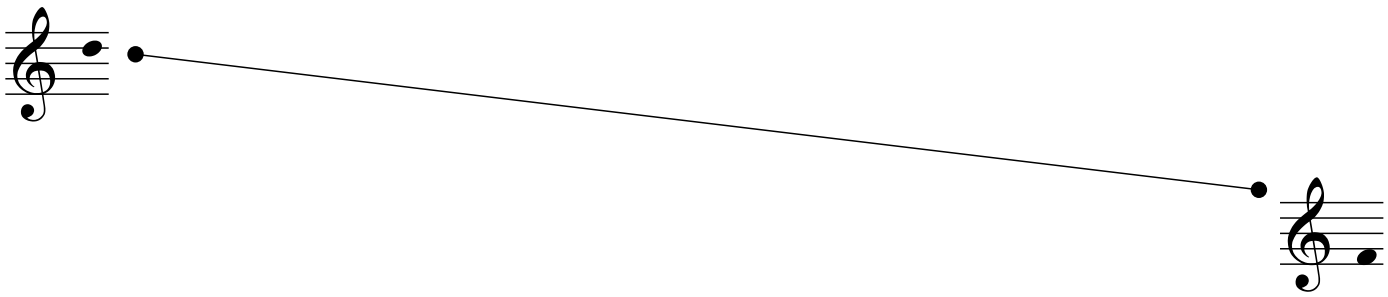
mbw (2008)



next possible edges:

5, 9, 16, 20, 26,
30, 35, 39, 43, 47, 51, 52, 53,
55, 56, 57, 60, 65, 69, 73, 74, 75

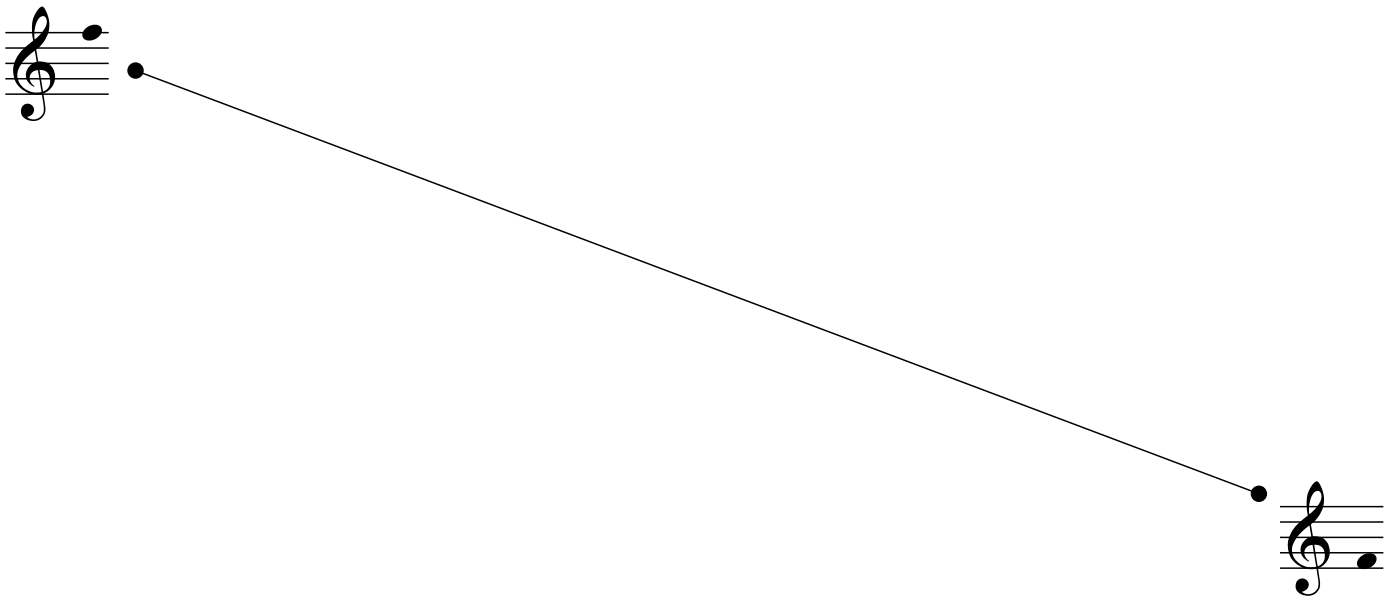
mbw (2008)



next possible edges:

5, 10, 16, 21, 26,
31, 35, 40, 43, 48, 51, 52, 53,
54, 56, 57, 61, 66, 70, 73, 76, 77

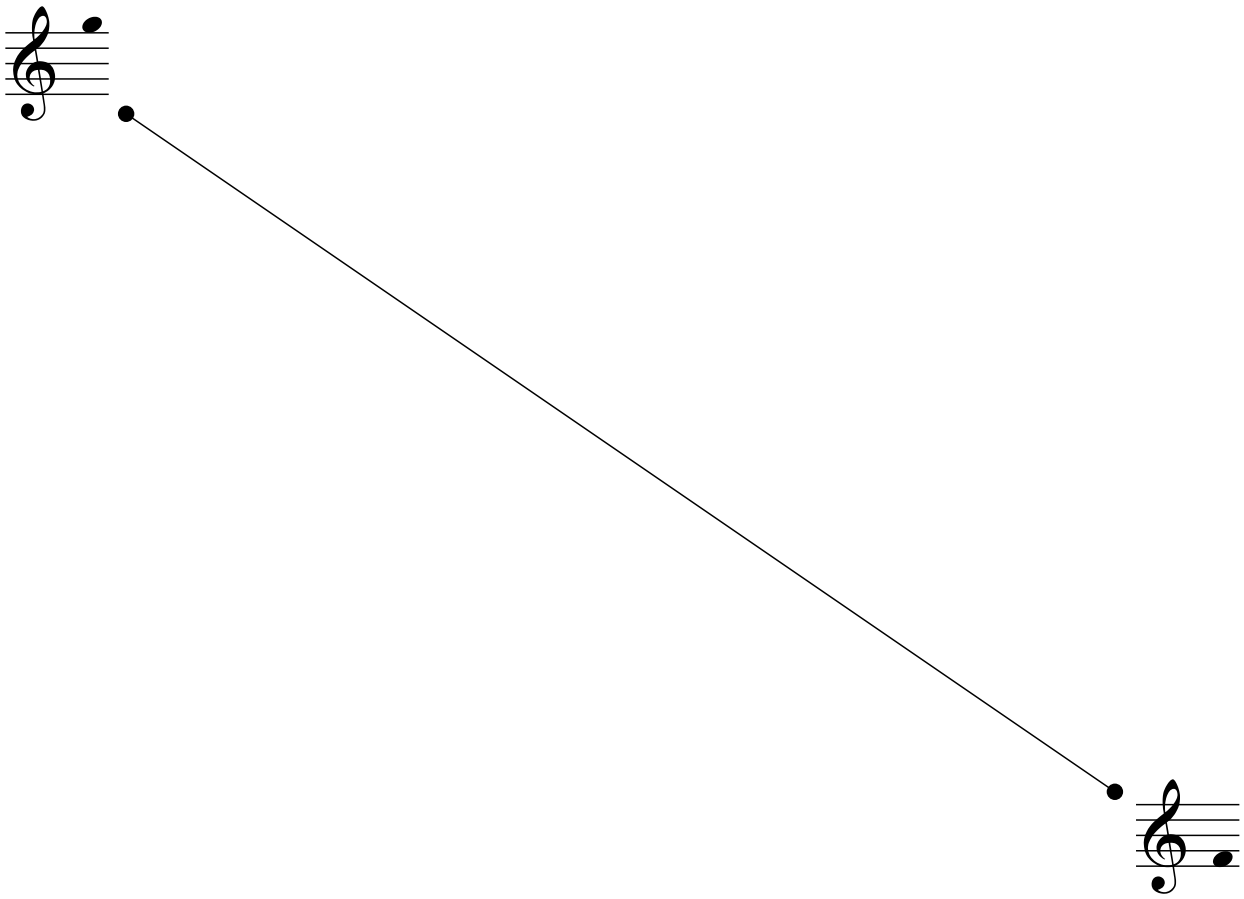
mbw (2008)



next possible edges:

5, 11, 16, 22, 26,
32, 35, 41, 43, 49, 51, 52, 53,
54, 55, 57, 62, 67, 71, 74, 76, 78

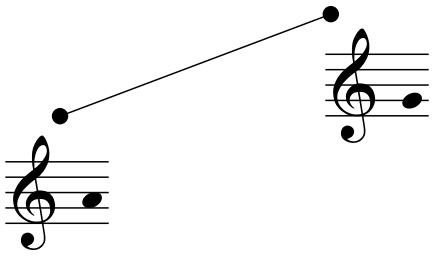
mbw (2008)



next possible edges:

5, 12, 16, 23, 26,
33, 35, 42, 43, 50, 51, 52, 53,
54, 55, 56, ■ 63, 68, 72, 75, 77, 78

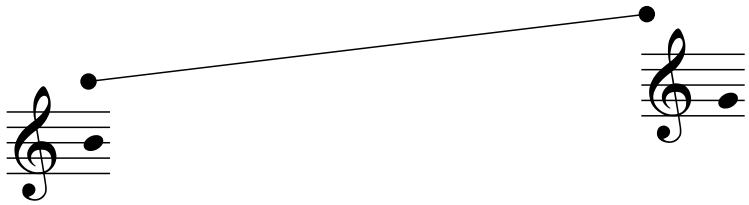
mbw (2008)



next possible edges:

6, 7, 17, 18, 27, 28,
36, 37, 44, 45, 51, 52,
59, 60, 61, 62, 63, 64, 65, 66, 67, 68

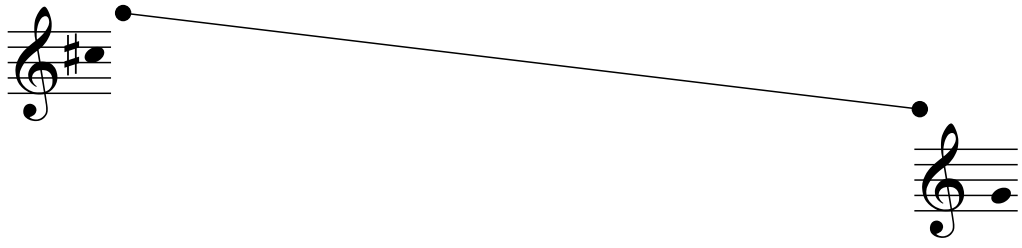
mbw (2008)



next possible edges:

6, 8, 17, 19, 27,
29, 36, 38, 44, 46, 51, 53,
58, 60, 61, 62, 63, 64, 69, 70, 71, 72

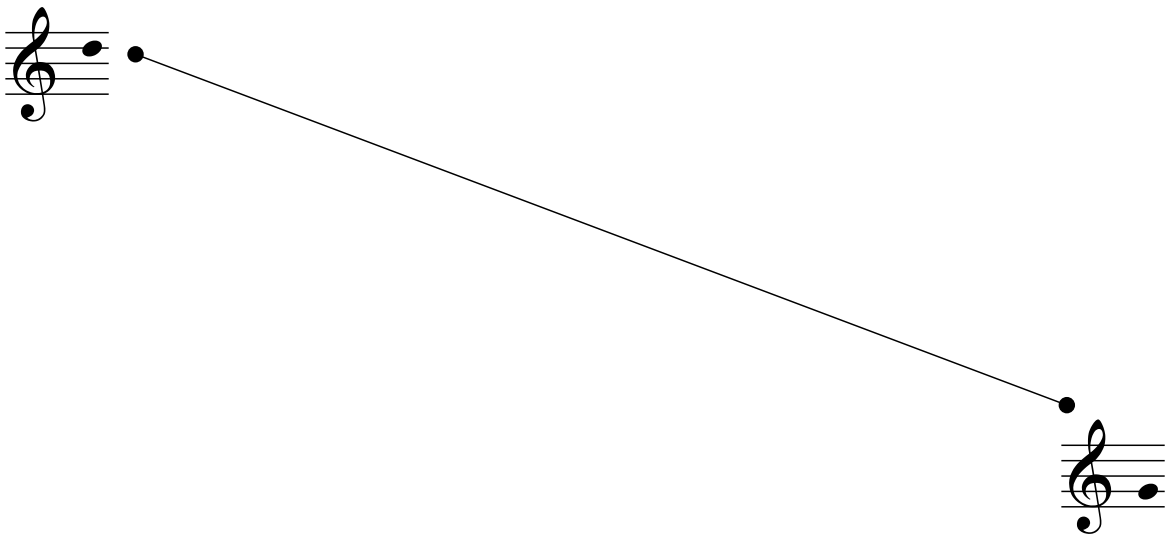
mbw (2008)



next possible edges:

6, 9, 17, 20, 27,
30, 36, 39, 44, 47, 51,
54, 58, 59, 61, 62, 63, 65, 69, 73, 74, 75

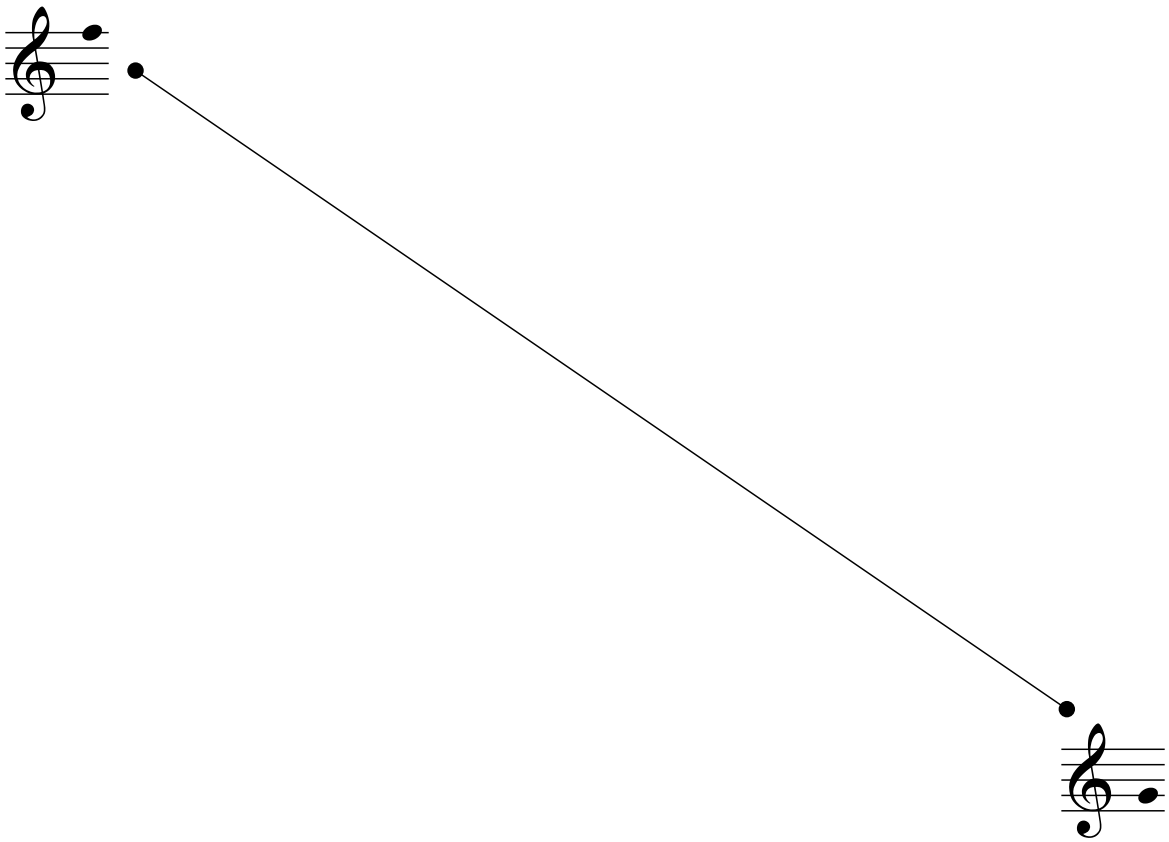
mbw (2008)



next possible edges:

6, 10, 17, 21, 27,
31, 36, 40, 44, 48, 51,
55, 58, 59, 60, 62, 63, 66, 70, 73, 76, 77

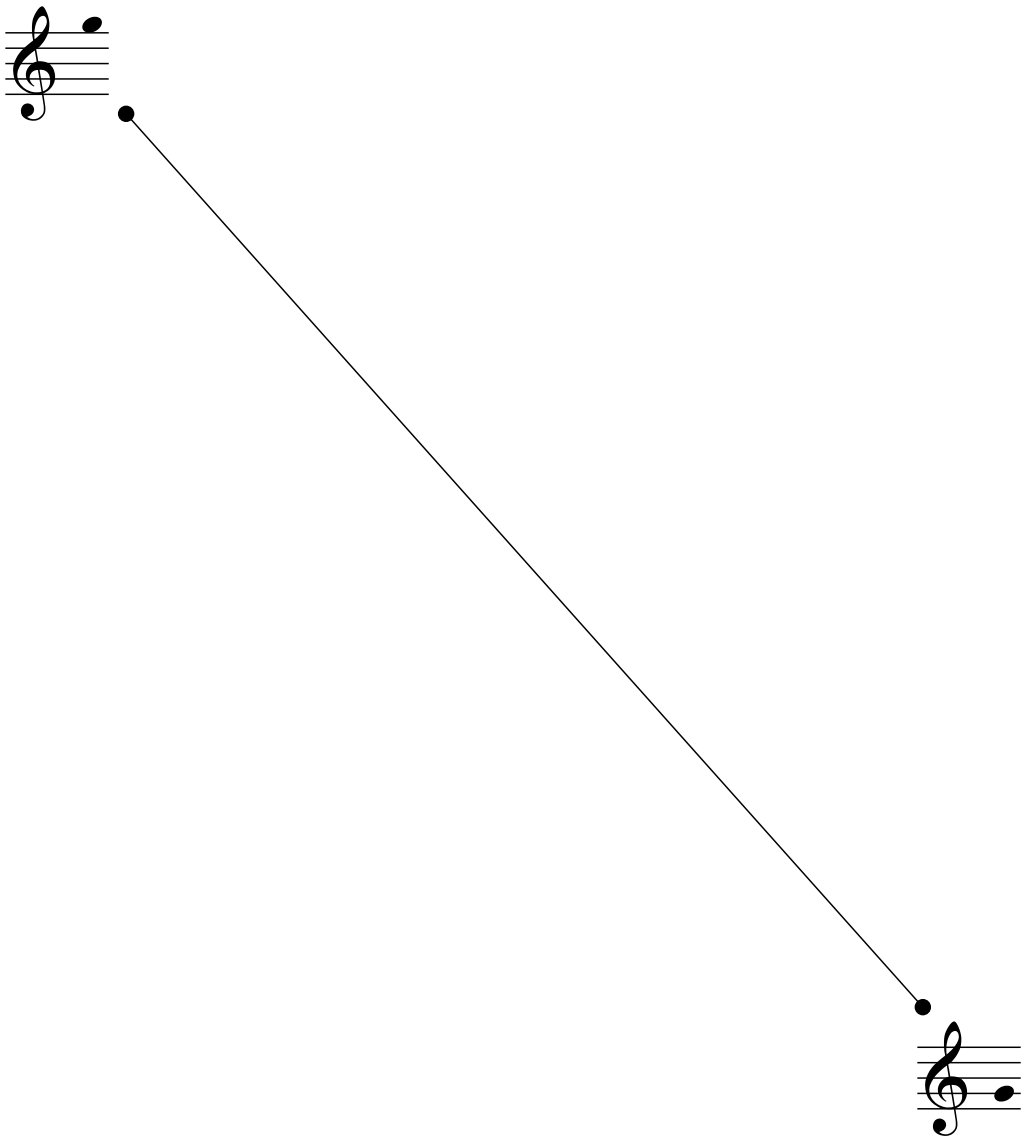
mbw (2008)



next possible edges:

6, 11, 17, 22, 27,
32, 36, 41, 44, 49, 51,
56, 58, 59, 60, 61, 63, 67, 71, 74, 76, 78

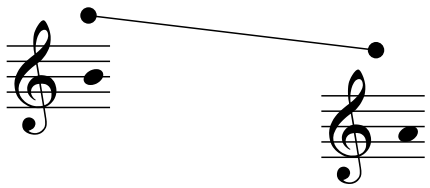
mbw (2008)



next possible edges:

6, 12, 17, 23, 27,
33, 36, 42, 44, 50, 51,
57, 58, 59, 60, 61, 62, ■ 68, 72, 75, 77, 78

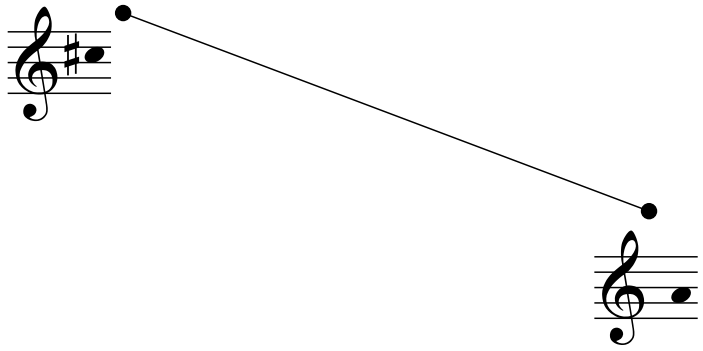
mbw (2008)



next possible edges:

7, 8, 18, 19, 28,
29, 37, 38, 45, 46, 52, 53,
58, 59, 65, 66, 67, 68, 69, 70, 71, 72

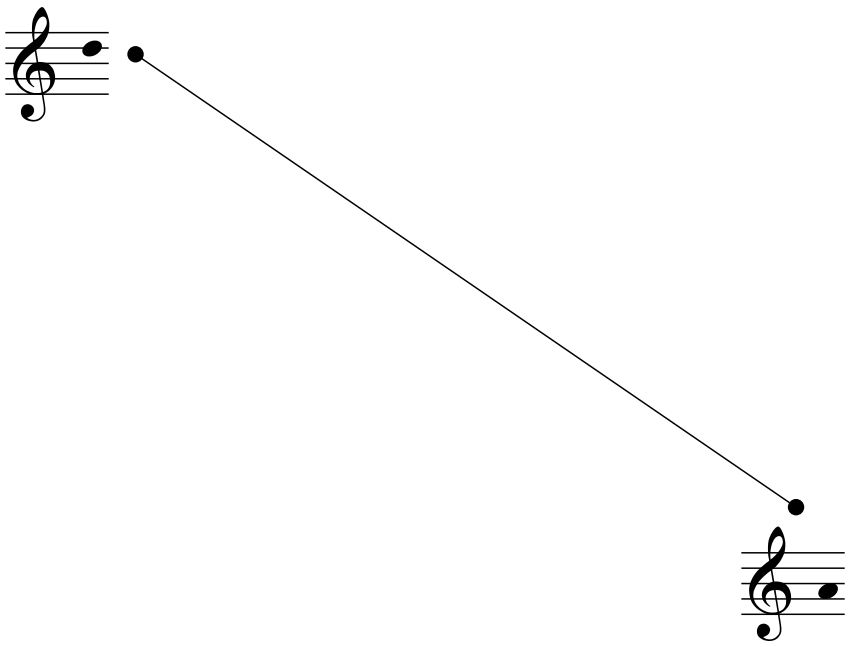
mbw (2008)



next possible edges:

7, 9, 18, 20, 28,
30, 37, 39, 45, 47, 52,
54, 58, 60, 64, 66, 67, 68, 69, 73, 74, 75

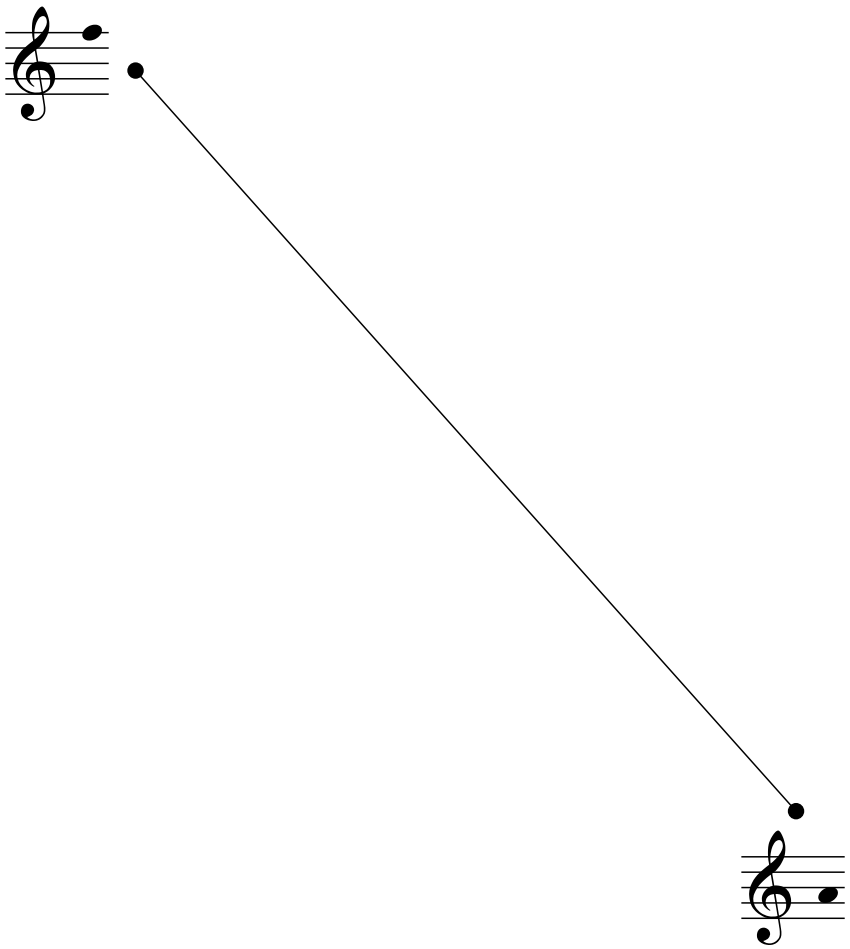
mbw (2008)



next possible edges:

7, 10, 18, 21, 28,
31, 37, 40, 45, 48, 52,
55, 58, 61, 64, 65, 67, 68, 70, 73, 76, 77

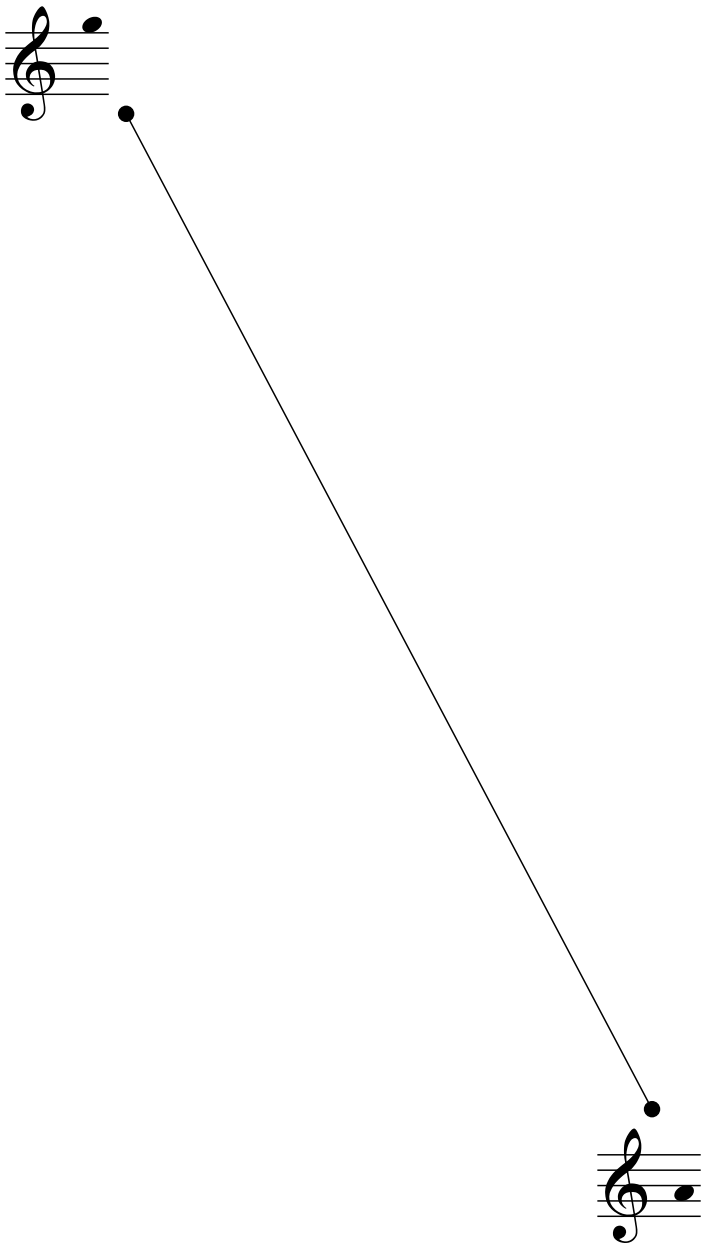
mbw (2008)



next possible edges:

7, 11, 18, 22, 28,
32, 37, 41, 45, 49, 52,
56, 58, 62, 64, 65, 66, 68 71, 74, 76, 78

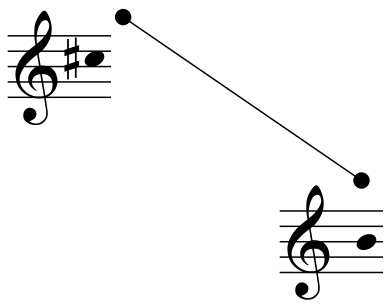
mbw (2008)



next possible edges:

7, 12, 18, 23, 28,
33, 37, 42, 45, 50, 52,
57, 58, 63, 64, 65, 66, 67, ■ 72, 75, 77, 78

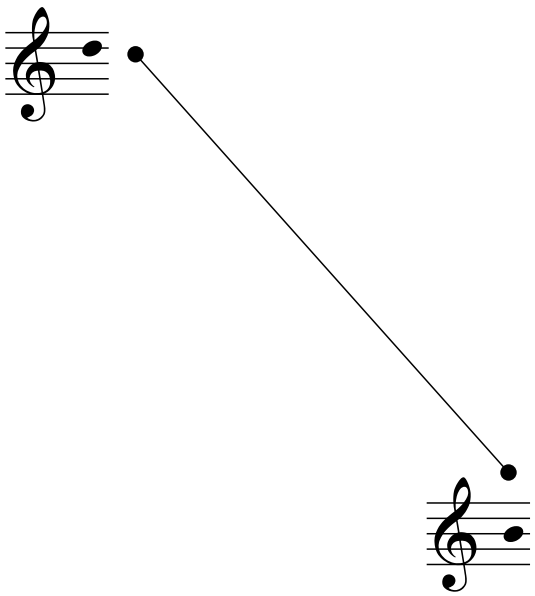
mbw (2008)



next possible edges:

8, 9, 19, 20,
29, 30, 38, 39, 46, 47, 53,
54, 59, 60, 64, 65, 70, 71, 72, 73, 74, 75

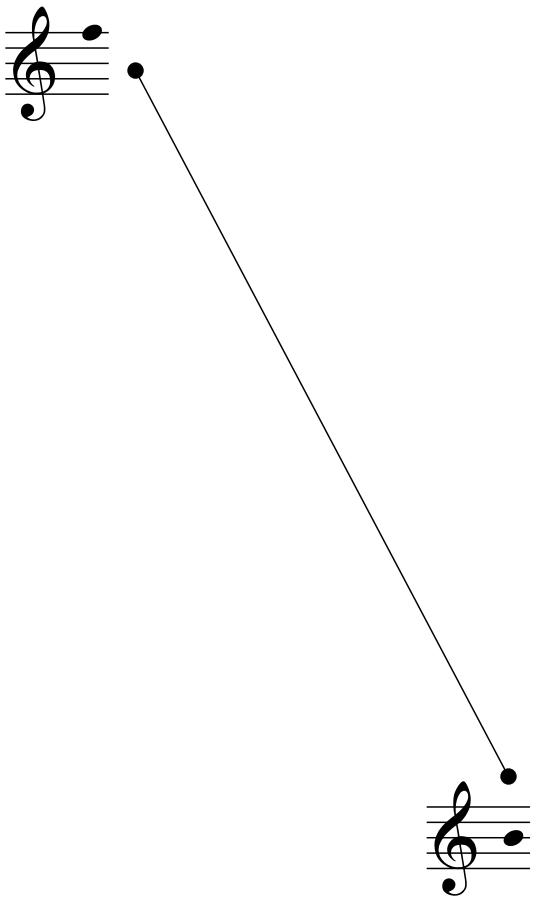
mbw (2008)



next possible edges:

8, 10, 19, 21,
29, 31, 38, 40, 46, 48, 53,
55, 59, 61, 64, 66, 69, 71, 72, 73, 76, 77

mbw (2008)



next possible edges:

8, 11, 19, 22,
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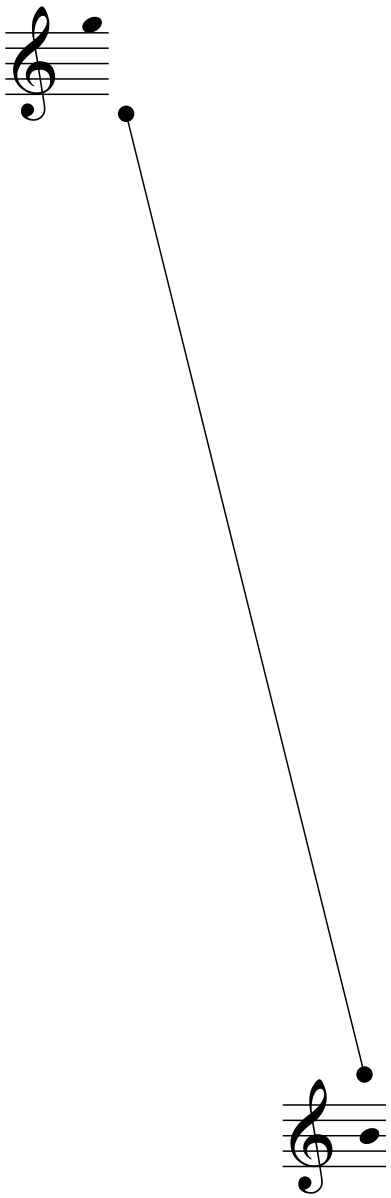
56, 59, 62, 64, 67, 69, 70, 72, 74, 76, 78

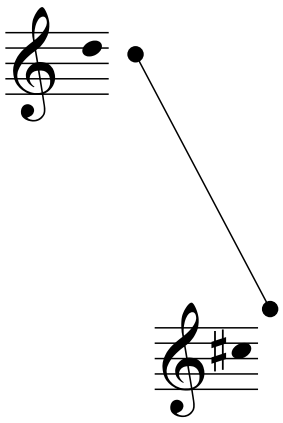
mbw (2008)



next possible edges:

8, 12, 19, 23,
29, 33, 38, 42, 46, 50, 53,
57, 59, 63, 64, 68, 69, 70, 71, 75, 77, 78

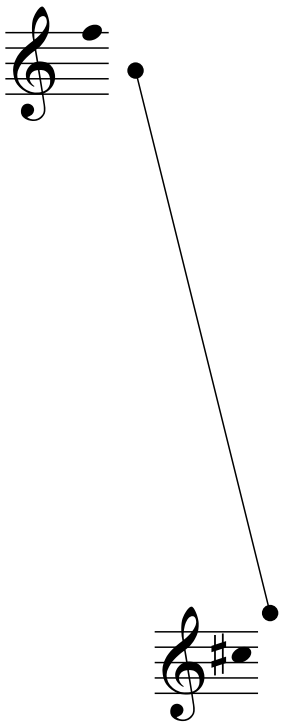
mbw (2008)



next possible edges:

9, 10, 20, 21,
30, 31, 39, 40, 47, 48,
54, 55, 60, 61, 65, 66, 69, 70, 74, 75, 76, 77

mbw (2008)



next possible edges:

9, 11, 20, 22,
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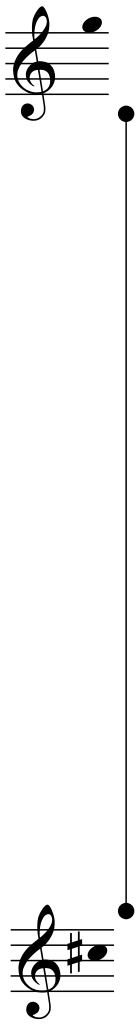
54, 56, 60, 62, 65, 67, 69, 71, 73, 75, 76, 78

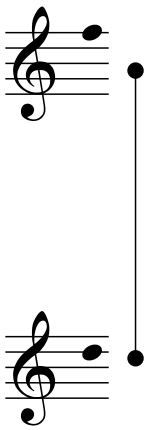
mbw (2008)



next possible edges:

9, 12, 20, 23,
30, 33, 39, 42, 47, 50,
54, 57, 60, 63, 65, 68, 69, 72, 73, 74, ■ 77, 78

mbw (2008)



next possible edges:

10, 11, 21, 22,
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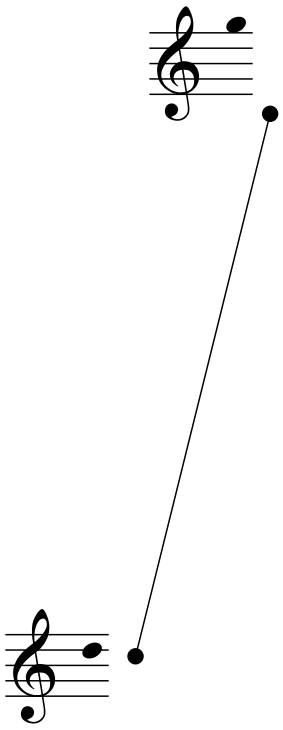
55, 56, 61, 62, 66, 67, 70, 71, 73, 74, 77, 78

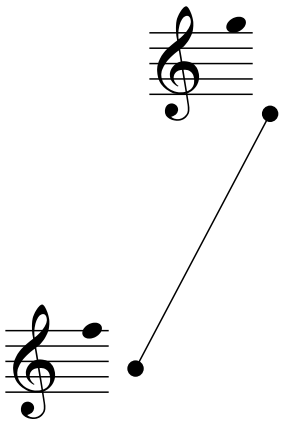
mbw (2008)



next possible edges:

10, 12, 21, 23,
31, 33, 40, 42, 48, 50,
55, 57, 61, 63, 66, 68, 70, 72, 73, 75, 76, 78

mbw (2008)



next possible edges:

11, 12, 22, 23,
32, 33, 41, 42, 49, 50,
56, 57, 62, 63, 67, 68, 71, 72, 74, 75, 76, 77, ■

mbw (2008)