

Pythagorean ascending scale folding from A4								
Circle of fifths	Py Frequency /Hz	Factor change	Py String length /m	Factor change		Circle of fifths	Py Frequency /Hz	Py String length /m
A4	440		1			A4	440	1
E5	660	3/2	0.666666667	2/3		A#4	469.8632813	0.9364426155
B4	495	3/4	0.888888889	4/3		B4	495	0.888888889
F#5	742.5	3/2	0.5925925926	2/3		C5	528.5961914	0.832393436
C#5	556.875	3/4	0.7901234568	4/3		C#5	556.875	0.7901234568
G#5	835.3125	3/2	0.5267489712	2/3		D5	594.6707153	0.7399052764
D#5	626.484375	3/4	0.7023319616	4/3		D#5	626.484375	0.7023319616
A#4	469.8632813	3/4	0.9364426155	4/3		E5	660	0.666666667
F5	704.7949219	3/2	0.624295077	2/3		F5	704.7949219	0.624295077
C5	528.5961914	3/4	0.832393436	4/3		F#5	742.5	0.5925925926
G5	792.8942871	3/2	0.5549289573	2/3		G5	792.8942871	0.5549289573
D5	594.6707153	3/4	0.7399052764	4/3		G#5	835.3125	0.5267489712
A5	892.006073	3/2	0.9865403685	2/3		A5	892.006073	0.9865403685

Pythagorean unfolded chain of fifths from A4

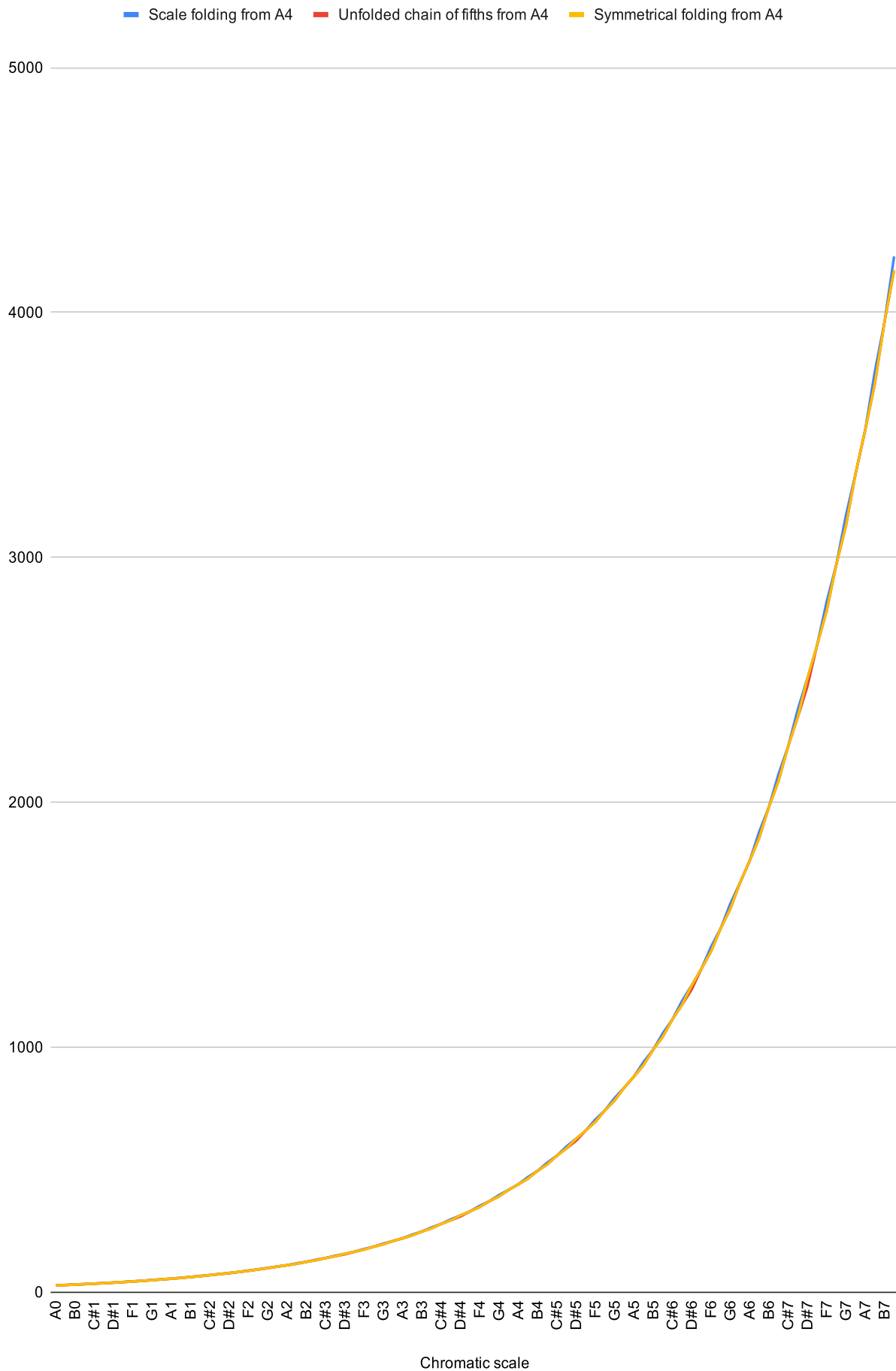
Circle of fifths	Py Frequency /Hz	Py String length /m
D#1	38.62825789	11.390625
A#1	57.94238683	7.59375
F2	86.91358025	5.0625
C3	130.3703704	3.375
G3	195.5555556	2.25
D4	293.3333333	1.5
A4	440	1
E5	660	0.666666667
B5	990	0.4444444444
F#6	1485	0.2962962963
C#7	2227.5	0.1975308642
G#7	3341.25	0.1316872428

Chromatic scale	Reference note	Octaves shifted	Py Frequency /Hz	Py String length /Hz
A0	A4	-4	27.5	16
A#0	A#1	-1	28.97119342	15.1875
B0	B5	-5	30.9375	14.22222222
C1	C3	-2	32.59259259	13.5
C#1	C#7	-6	34.8046875	12.64197531
D1	D4	-3	36.66666667	12
D#1	D#1	0	38.62825789	11.390625
E1	E5	-4	41.25	10.66666667
F1	F2	-1	43.45679012	10.125
F#1	F#6	-5	46.40625	9.481481481
G1	G3	-2	48.88888889	9
G#1	G#7	-6	52.20703125	8.427983539
A1	A4	-3	55	8
A#1	A#1	0	57.94238683	7.59375
B1	B5	-4	61.875	7.111111111
C2	C3	-1	65.18518519	6.75
C#2	C#7	-5	69.609375	6.320987654
D2	D4	-2	73.33333333	6
D#2	D#1	1	77.25651578	5.6953125
E2	E5	-3	82.5	5.333333333
F2	F2	0	86.91358025	5.0625
F#2	F#6	-4	92.8125	4.740740741
G2	G3	-1	97.77777778	4.5
G#2	G#7	-5	104.4140625	4.21399177
A2	A4	-2	110	4
A#2	A#1	1	115.8847737	3.796875
B2	B5	-3	123.75	3.555555556
C3	C3	0	130.3703704	3.375
C#3	C#7	-4	139.21875	3.160493827
D3	D4	-1	146.6666667	3
D#3	D#1	2	154.5130316	2.84765625
E3	E5	-2	165	2.666666667
F3	F2	1	173.8271605	2.53125
F#3	F#6	-3	185.625	2.37037037
G3	G3	0	195.5555556	2.25
G#3	G#7	-4	208.828125	2.106995885
A3	A4	-1	220	2
A#3	A#1	2	231.7695473	1.8984375
B3	B5	-2	247.5	1.777777778
C4	C3	1	260.7407407	1.6875
C#4	C#7	-3	278.4375	1.580246914
D4	D4	0	293.3333333	1.5
D#4	D#1	3	309.0260631	1.423828125
E4	E5	-1	330	1.333333333
F4	F2	2	347.654321	1.265625
F#4	F#6	-2	371.25	1.185185185
G4	G3	1	391.1111111	1.125
G#4	G#7	-3	417.65625	1.053497942
A4	A4	0	440	1
A#4	A#1	3	463.5390947	0.94921875
B4	B5	-1	495	0.8888888889
C5	C3	2	521.4814815	0.84375
C#5	C#7	-2	556.875	0.7901234568
D5	D4	1	586.6666667	0.75
D#5	D#1	4	618.0521262	0.7119140625
E5	E5	0	660	0.6666666667
F5	F2	3	695.308642	0.6328125
F#5	F#6	-1	742.5	0.5925925926
G5	G3	2	782.2222222	0.5625
G#5	G#7	-2	835.3125	0.5267489712
A5	A4	1	880	0.5
A#5	A#1	4	927.0781893	0.474609375
B5	B5	0	990	0.4444444444
C6	C3	3	1042.962963	0.421875
C#6	C#7	-1	1113.75	0.3950617284
D6	D4	2	1173.333333	0.375
D#6	D#1	5	1236.104252	0.3559570313
E6	E5	1	1320	0.3333333333
F6	F2	4	1390.617284	0.31640625

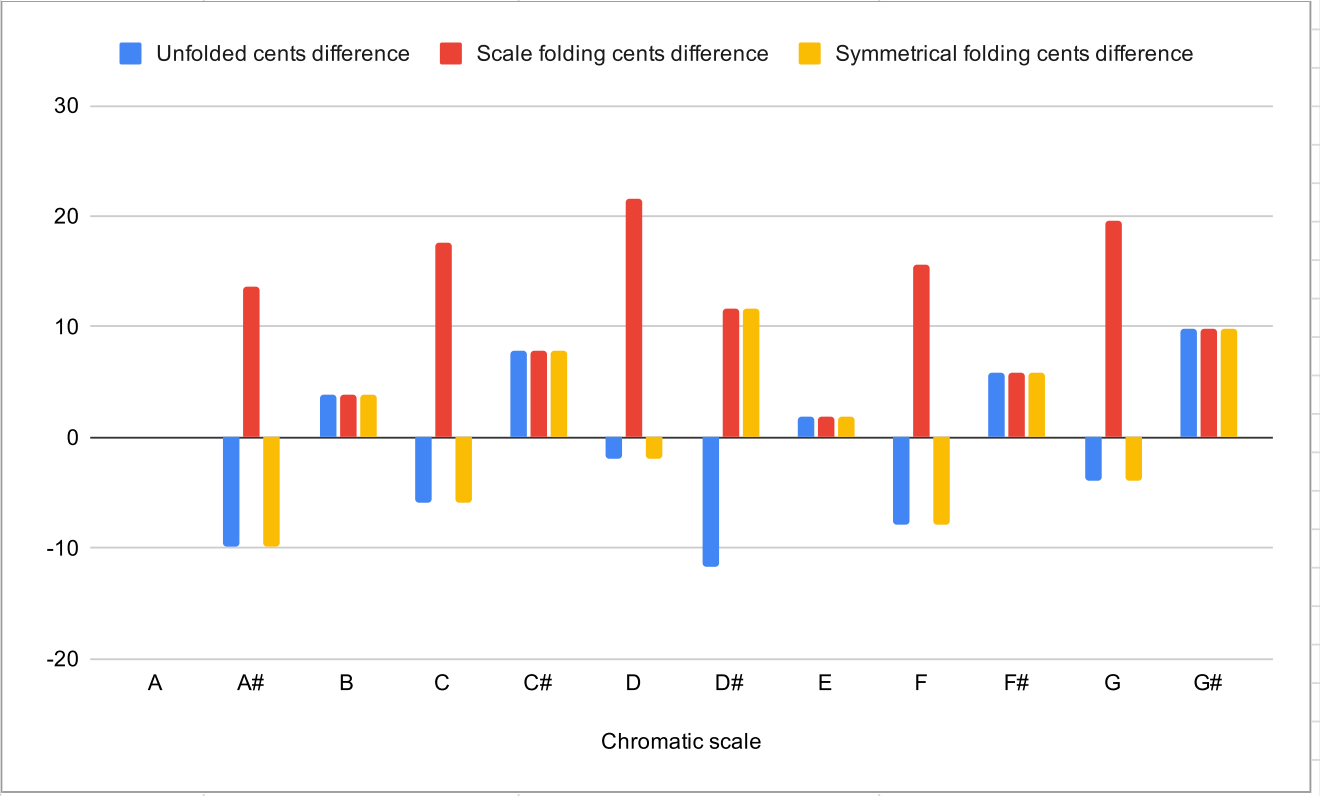
				F#6	F#6	0	1485	0.2962962963
				G6	G3	3	1564.444444	0.28125
				G#6	G#7	-1	1670.625	0.2633744856
				A6	A4	2	1760	0.25
				A#6	A#1	5	1854.156379	0.2373046875
				B6	B5	1	1980	0.2222222222
				C7	C3	4	2085.925926	0.2109375
				C#7	C#7	0	2227.5	0.1975308642
				D7	D4	3	2346.666667	0.1875
				D#7	D#1	6	2472.208505	0.1779785156
				E7	E5	2	2640	0.1666666667
				F7	F2	5	2781.234568	0.158203125
				F#7	F#6	1	2970	0.1481481481
				G7	G3	4	3128.888889	0.140625
				G#7	G#7	0	3341.25	0.1316872428
				A7	A4	3	3520	0.125
				A#7	A#1	6	3708.312757	0.1186523438
				B7	B5	2	3960	0.1111111111
				C8	C3	5	4171.851852	0.10546875

Pythagorean symmetrical folding from A4												
Circle of fifths	Frequency /Hz	Factor change	Length /m	Factor change			Circle of fifths	Frequency /Hz	Factor change	Length /m	Factor change	
A#4	463.5390947	2/3	0.94921875	3/2			A4	440		1		
F5	695.308642	4/3	0.6328125	4/3			A#4	463.5390947	2/3	0.94921875	3/2	
C5	521.4814815	2/3	0.84375	3/2			B4	495	3/4	0.888888889	4/3	
G5	782.2222222	4/3	0.5625	4/3			C5	521.4814815	2/3	0.84375	3/2	
D5	586.6666667	4/3	0.75	4/3			C#5	556.875	3/4	0.7901234568	4/3	
A4	440		1				D5	586.6666667	4/3	0.75	4/3	
E5	660	3/2	0.666666667	2/3			D#5	626.484375	3/4	0.7023319616	4/3	
B4	495	3/4	0.888888889	4/3			E5	660	3/2	0.666666667	2/3	
F#5	742.5	3/2	0.5925925926	2/3			F5	695.308642	4/3	0.6328125	4/3	
C#5	556.875	3/4	0.7901234568	4/3			F#5	742.5	3/2	0.5925925926	2/3	
G#5	835.3125	3/2	0.5267489712	2/3			G5	782.2222222	4/3	0.5625	4/3	
D#5	626.484375	3/4	0.7023319616	4/3			G#5	835.3125	3/2	0.5267489712	2/3	

Chromatic scale	Scale folding from A4	Unfolded chain of fifths from A4	Symmetrical folding from A4	Equal temperament	Scale folding cents difference	Unfolded cents difference	Symmetrical folding cents difference
A0	27.5	27.5	27.5	27.5	0	0	0
A#0	29.36645508	28.97119342	28.97119342	29.13523509	13.68500606	-9.775004327	-9.775004327
B0	30.9375	30.9375	30.9375	30.86770633	3.910001731	3.910001731	3.910001731
C1	33.03726196	32.59259259	32.59259259	32.70319566	17.59500779	-5.865002596	-5.865002596
C#1	34.8046875	34.8046875	34.8046875	34.64782887	7.820003462	7.820003462	7.820003462
D1	37.16691971	36.66666667	36.66666667	36.70809599	21.50500952	-1.955000865	-1.955000865
D#1	39.15527344	38.62825789	39.15527344	38.98087297	11.73000519	-11.73000519	11.73000519
E1	41.25	41.25	41.25	41.20344461	1.955000865	1.955000865	1.955000865
F1	44.04968262	43.45679012	43.45679012	43.65352893	15.64000692	-7.820003462	-7.820003462
F#1	46.40625	46.40625	46.40625	46.24930284	5.865002596	5.865002596	5.865002596
G1	49.55589294	48.88888889	48.88888889	48.9994295	19.55000865	-3.910001731	-3.910001731
G#1	52.20703125	52.20703125	52.20703125	51.9130872	9.775004327	9.775004327	9.775004327
A1	55	55	55	55	0	0	0
A#1	58.73291016	57.94238683	57.94238683	58.27047019	13.68500606	-9.775004327	-9.775004327
B1	61.875	61.875	61.875	61.73541266	3.910001731	3.910001731	3.910001731
C2	66.07452393	65.18518519	65.18518519	65.40639133	17.59500779	-5.865002596	-5.865002596
C#2	69.609375	69.609375	69.609375	69.29565774	7.820003462	7.820003462	7.820003462
D2	74.33383942	73.33333333	73.33333333	73.41619198	21.50500952	-1.955000865	-1.955000865
D#2	78.31054688	77.25651578	78.31054688	77.78174593	11.73000519	-11.73000519	11.73000519
E2	82.5	82.5	82.5	82.40688923	1.955000865	1.955000865	1.955000865
F2	88.0936523	86.91358025	86.91358025	87.30705786	15.64000692	-7.820003462	-7.820003462
F#2	92.8125	92.8125	92.8125	92.49860568	5.865002596	5.865002596	5.865002596
G2	99.1178589	97.77777778	97.77777778	97.998859	19.55000865	-3.910001731	-3.910001731
G#2	104.4140625	104.4140625	104.4140625	103.8261744	9.775004327	9.775004327	9.775004327
A2	110	110	110	110	0	0	0
A#2	117.4658203	115.8847737	115.8847737	116.5409404	13.68500606	-9.775004327	-9.775004327
B2	123.75	123.75	123.75	123.4708253	3.910001731	3.910001731	3.910001731
C3	132.1490479	130.3703704	130.3703704	130.8127827	17.59500779	-5.865002596	-5.865002596
C#3	139.21875	139.21875	139.21875	138.5913155	7.820003462	7.820003462	7.820003462
D3	148.6676788	146.6666667	146.6666667	146.832384	21.50500952	-1.955000865	-1.955000865
D#3	156.6210938	154.5130316	156.6210938	155.5634919	11.73000519	-11.73000519	11.73000519
E3	165	165	165	164.8137785	1.955000865	1.955000865	1.955000865
F3	176.1987305	173.8271605	173.8271605	174.6141157	15.64000692	-7.820003462	-7.820003462
F#3	185.625	185.625	185.625	184.9972114	5.865002596	5.865002596	5.865002596
G3	198.2235718	195.5555556	195.5555556	195.997718	19.55000865	-3.910001731	-3.910001731
G#3	208.828125	208.828125	208.828125	207.6523488	9.775004327	9.775004327	9.775004327
A3	220	220	220	220	0	0	0
A#3	234.9316406	231.7695473	231.7695473	233.0818808	13.68500606	-9.775004327	-9.775004327
B3	247.5	247.5	247.5	246.9416506	3.910001731	3.910001731	3.910001731
C4	264.2980957	260.7407407	260.7407407	261.6255653	17.59500779	-5.865002596	-5.865002596
C#4	278.4375	278.4375	278.4375	277.182631	7.820003462	7.820003462	7.820003462
D4	297.3353577	293.3333333	293.3333333	293.6647679	21.50500952	-1.955000865	-1.955000865
D#4	313.2421875	309.0260631	313.2421875	311.1269837	11.73000519	-11.73000519	11.73000519
E4	330	330	330	329.6275569	1.955000865	1.955000865	1.955000865
F4	352.3974609	347.654321	347.654321	349.2282314	15.64000692	-7.820003462	-7.820003462
F#4	371.25	371.25	371.25	369.9944227	5.865002596	5.865002596	5.865002596
G4	396.4471436	391.1111111	391.1111111	391.995436	19.55000865	-3.910001731	-3.910001731
G#4	417.65625	417.65625	417.65625	415.3046976	9.775004327	9.775004327	9.775004327
A4	440	440	440	440	0	0	0
A#4	469.8632813	463.5390947	463.5390947	466.1637615	13.68500606	-9.775004327	-9.775004327
B4	495	495	495	493.8833013	3.910001731	3.910001731	3.910001731
C5	528.5961914	521.4814815	521.4814815	523.2511306	17.59500779	-5.865002596	-5.865002596
C#5	556.875	556.875	556.875	554.365262	7.820003462	7.820003462	7.820003462
D5	594.6707153	586.6666667	586.6666667	587.3295358	21.50500952	-1.955000865	-1.955000865
D#5	626.484375	618.0521262	626.484375	622.2539674	11.73000519	-11.73000519	11.73000519
E5	660	660	660	659.2551138	1.955000865	1.955000865	1.955000865
F5	704.7949219	695.308642	695.308642	698.4564629	15.64000692	-7.820003462	-7.820003462
F#5	742.5	742.5	742.5	739.9888454	5.865002596	5.865002596	5.865002596
G5	792.8942871	782.2222222	782.2222222	783.990872	19.55000865	-3.910001731	-3.910001731
G#5	835.3125	835.3125	835.3125	830.6093952	9.775004327	9.775004327	9.775004327
A5	880	880	880	880	0	0	0
A#5	939.7265625	927.0781893	927.0781893	932.327523	13.68500606	-9.775004327	-9.775004327
B5	990	990	990	987.7666025	3.910001731	3.910001731	3.910001731
C6	1057.192383	1042.962963	1042.962963	1046.502261	17.59500779	-5.865002596	-5.865002596
C#6	1113.75	1113.75	1113.75	1108.730524	7.820003462	7.820003462	7.820003462
D6	1189.341431	1173.333333	1173.333333	1174.659072	21.50500952	-1.955000865	-1.955000865
D#6	1252.96875	1236.104252	1252.96875	1244.507935	11.73000519	-11.73000519	11.73000519
E6	1320	1320	1320	1318.510228	1.955000865	1.955000865	1.955000865
F6	1409.589844	1390.617284	1390.617284	1396.912926	15.64000692	-7.820003462	-7.820003462
F#6	1485	1485	1485	1479.977691	5.865002596	5.865002596	5.865002596
G6	1585.788574	1564.444444	1564.444444	1567.981744	19.55000865	-3.910001731	-3.910001731
G#6	1670.625	1670.625	1670.625	1661.21879	9.775004327	9.775004327	9.775004327
A6	1760	1760	1760	1760	0	0	0
A#6	1879.453125	1854.156379	1854.156379	1864.655046	13.68500606	-9.775004327	-9.775004327
B6	1980	1980	1980	1975.533205	3.910001731	3.910001731	3.910001731
C7	2114.384766	2085.925926	2085.925926	2093.004522	17.59500779	-5.865002596	-5.865002596
C#7	2227.5	2227.5	2227.5	2217.461048	7.820003462	7.820003462	7.820003462
D7	2378.682861	2346.666667	2346.666667	2349.318143	21.50500952	-1.955000865	-1.955000865
D#7	2505.9375	2472.208505	2505.9375	2489.01587	11.73000519	-11.73000519	11.73000519
E7	2640	2640	2640	2637.020455	1.955000865	1.955000865	1.955000865
F7	2819.179688	2781.234568	2781.234568	2793.825851	15.64000692	-7.820003462	-7.820003462
F#7	2970	2970	2970	2959.955382	5.865002596	5.865002596	5.865002596
G7	3171.577148	3128.888889	3128.888889	3135.963488	19.55000865	-3.910001731	-3.910001731
G#7	3341.25	3341.25	3341.25	3322.437581	9.775004327	9.775004327	9.775004327
A7	3520	3520	3520	3520	0	0	0
A#7	3758.90625	3708.312757	3708.312757	3729.310092	13.68500606	-9.775004327	-9.775004327
B7	3960	3960	3960	3951.06641	3.910001731	3.910001731	3.910001731
C8	4228.769531	4171.851852	4171.851852	4186.009045	17.59500779	-5.865002596	-5.865002596



Chromatic scale	Unfolded cents difference	Scale folding cents difference	Symmetrical folding cents difference
A	0	0	0
A#	-9.775004327	13.68500606	-9.775004327
B	3.910001731	3.910001731	3.910001731
C	-5.865002596	17.59500779	-5.865002596
C#	7.820003462	7.820003462	7.820003462
D	-1.955000865	21.50500952	-1.955000865
D#	-11.73000519	11.73000519	11.73000519
E	1.955000865	1.955000865	1.955000865
F	-7.820003462	15.64000692	-7.820003462
F#	5.865002596	5.865002596	5.865002596
G	-3.910001731	19.55000865	-3.910001731
G#	9.775004327	9.775004327	9.775004327



Chromatic scale	Equal temperament /Hz	harmonic =	11
A0	27.5	302.5	D#4 +48.68 cents
A#0	29.13523509	320.487586	E4 +48.68 cents
B0	30.86770633	339.5447696	F4 +48.68 cents
C1	32.70319566	359.7351523	F#4 +48.68 cents
C#1	34.64782887	381.1261176	G4 +48.68 cents
D1	36.70809599	403.7890559	G#4 +48.68 cents
D#1	38.89087297	427.7996026	A4 +48.68 cents
E1	41.20344461	453.2378908	A#4 +48.68 cents
F1	43.65352893	480.1888182	B4 +48.68 cents
F#1	46.24930284	508.7423312	C5 +48.68 cents
G1	48.9994295	538.9937245	C#5 +48.68 cents
G#1	51.9130872	571.0439592	D5 +48.68 cents
A1	55	605	D#5 +48.68 cents
A#1	58.27047019	640.9751721	E5 +48.68 cents
B1	61.73541266	679.0895392	F5 +48.68 cents
C2	65.40639133	719.4703046	F#5 +48.68 cents
C#2	69.29565774	762.2522352	G5 +48.68 cents
D2	73.41619198	807.5781118	G#5 +48.68 cents
D#2	77.78174593	855.5992052	A5 +48.68 cents
E2	82.40688923	906.4757815	A#5 +48.68 cents
F2	87.30705786	960.3776364	B5 +48.68 cents
F#2	92.49860568	1017.484662	C6 +48.68 cents
G2	97.998859	1077.987449	C#6 +48.68 cents
G#2	103.8261744	1142.087918	D6 +48.68 cents
A2	110	1210	D#6 +48.68 cents
A#2	116.5409404	1281.950344	E6 +48.68 cents
B2	123.4708253	1358.179078	F6 +48.68 cents
C3	130.8127827	1438.940609	F#6 +48.68 cents
C#3	138.5913155	1524.50447	G6 +48.68 cents
D3	146.832384	1615.156224	G#6 +48.68 cents
D#3	155.5634919	1711.19841	A6 +48.68 cents
E3	164.8137785	1812.951563	A#6 +48.68 cents
F3	174.6141157	1920.755273	B6 +48.68 cents
F#3	184.9972114	2034.969325	C7 +48.68 cents
G3	195.997718	2155.974898	C#7 +48.68 cents
G#3	207.6523488	2284.175837	D7 +48.68 cents
A3	220	2420	D#7 +48.68 cents
A#3	233.0818808	2563.900688	E7 +48.68 cents
B3	246.9416506	2716.358157	F7 +48.68 cents
C4	261.6255653	2877.881218	F#7 +48.68 cents
C#4	277.182631	3049.008941	G7 +48.68 cents
D4	293.6647679	3230.312447	G#7 +48.68 cents
D#4	311.1269837	3422.396821	A7 +48.68 cents
E4	329.6275569	3625.903126	A#7 +48.68 cents
F4	349.2282314	3841.510546	B7 +48.68 cents

F#4	369.9944227	4069.93865	C8 +48.68 cents
G4	391.995436	4311.949796	
G#4	415.3046976	4568.351673	
A4	440	4840	
A#4	466.1637615	5127.801377	
B4	493.8833013	5432.716314	
C5	523.2511306	5755.762437	
C#5	554.365262	6098.017881	
D5	587.3295358	6460.624894	
D#5	622.2539674	6844.793642	
E5	659.2551138	7251.806252	
F5	698.4564629	7683.021092	
F#5	739.9888454	8139.8773	
G5	783.990872	8623.899592	
G#5	830.6093952	9136.703347	
A5	880	9680	
A#5	932.327523	10255.60275	
B5	987.7666025	10865.43263	
C6	1046.502261	11511.52487	
C#6	1108.730524	12196.03576	
D6	1174.659072	12921.24979	
D#6	1244.507935	13689.58728	
E6	1318.510228	14503.6125	
F6	1396.912926	15366.04218	
F#6	1479.977691	16279.7546	
G6	1567.981744	17247.79918	
G#6	1661.21879	18273.40669	
A6	1760	19360	
A#6	1864.655046	20511.20551	
B6	1975.533205	21730.86526	
C7	2093.004522	23023.04975	
C#7	2217.461048	24392.07153	
D7	2349.318143	25842.49958	
D#7	2489.01587	27379.17457	
E7	2637.020455	29007.22501	
F7	2793.825851	30732.08437	
F#7	2959.955382	32559.5092	
G7	3135.963488	34495.59837	
G#7	3322.437581	36546.81339	
A7	3520	38720	
A#7	3729.310092	41022.41101	
B7	3951.06641	43461.73051	
C8	4186.009045	46046.09949	

Harmonic =																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A0	A1	E2 -1.96 cents	A2	D#3 +13.69 cents	E3 -1.96 cents	G3 +31.17 cents	A3	B3 -3.91 cents	D#4 +13.69 cents	D#4 +48.68 cents	E4 -1.96 cents	F#4 -40.53 cents	G#4 +31.17 cents	G#4 +11.73 cents	A4	A#4 -4.96 cents	B4 -3.91 cents	C#5 +2.49 cents	C#5 +13.69 cents
A#0	A#1	F#2 -1.96 cents	A#2	D3 +13.69 cents	F3 -1.96 cents	G#3 +31.17 cents	A#3	C4 -3.91 cents	D#4 +13.69 cents	E4 +48.68 cents	F4 -1.96 cents	F#4 -40.53 cents	G#4 +31.17 cents	A#4 +11.73 cents	A#4	B4 -4.96 cents	C#5 -3.91 cents	C#5 +2.49 cents	D5 +13.69 cents
B0	B1	F#2 -1.96 cents	B2	D#3 +13.69 cents	F#3 -1.96 cents	A3 +31.17 cents	B3	C#4 -3.91 cents	D#4 +13.69 cents	F4 +48.68 cents	F#4 -1.96 cents	G#4 -40.53 cents	A#4 +31.17 cents	A#4 +11.73 cents	B4	C5 -4.96 cents	C#5 -3.91 cents	D5 +2.49 cents	D#5 +13.69 cents
C1	C2	G2 -1.96 cents	C3	E3 +13.69 cents	G3 -1.96 cents	A#3 +31.17 cents	C4	D4 -3.91 cents	E4 +13.69 cents	F#4 +48.68 cents	G4 -1.96 cents	G#4 -40.53 cents	A#4 +31.17 cents	B4 +11.73 cents	C5	C#5 -4.96 cents	D5 -3.91 cents	D#5 +2.49 cents	E5 +13.69 cents
C#1	C#2	G#2 -1.96 cents	C#3	F3 +13.69 cents	G#3 -1.96 cents	B3 +31.17 cents	C#4	D#4 -3.91 cents	F4 +13.69 cents	G4 +48.68 cents	G#4 -1.96 cents	A#4 -40.53 cents	B#4 +31.17 cents	C5 +11.73 cents	C#5	D5 -4.96 cents	D#5 -3.91 cents	E5 +2.49 cents	F5 +13.69 cents
D1	D2	A2 -1.96 cents	D3	F#3 +13.69 cents	A3 -1.96 cents	C4 +31.17 cents	D4	E4 -3.91 cents	F#4 +13.69 cents	G#4 +48.68 cents	A#4 -1.96 cents	A#4 -40.53 cents	C5 +31.17 cents	C#5 +11.73 cents	D5	D#5 -4.96 cents	E5 -3.91 cents	F5 +2.49 cents	F#5 +13.69 cents
D#1	D#2	A#2 -1.96 cents	D#3	G3 +13.69 cents	A#3 -1.96 cents	C#4 +31.17 cents	D#4	F4 -3.91 cents	G4 +13.69 cents	A#4 +48.68 cents	A#4 -1.96 cents	B4 -40.53 cents	C#5 +31.17 cents	D5 +11.73 cents	D#5	E5 -4.96 cents	F5 -3.91 cents	F#5 +2.49 cents	G5 +13.69 cents
E1	E2	B2 -1.96 cents	E3	G#3 +13.69 cents	B3 -1.96 cents	D#4 +31.17 cents	E4	F#4 -3.91 cents	G#4 +13.69 cents	A#4 +48.68 cents	B4 -1.96 cents	C5 -40.53 cents	D#5 +31.17 cents	D#5 +11.73 cents	E5	F5 -4.96 cents	F#5 -3.91 cents	G5 +2.49 cents	G#5 +13.69 cents
F1	F2	C3 -1.96 cents	F3	A3 +13.69 cents	C4 -1.96 cents	D#4 +31.17 cents	F4	C#4 -3.91 cents	A#4 +13.69 cents	B#4 +48.68 cents	C5 -1.96 cents	C#5 -40.53 cents	D#5 +31.17 cents	E5 +11.73 cents	F#5	F#5 -4.96 cents	G#5 -3.91 cents	A5 +2.49 cents	A#5 +13.69 cents
F#1	F#2	C#3 -1.96 cents	F#3	A#3 +13.69 cents	C#4 -1.96 cents	E4 +31.17 cents	F#4	G#4 -3.91 cents	A#4 +13.69 cents	C5 +48.68 cents	C#5 -1.96 cents	D5 -40.53 cents	E5 +31.17 cents	F5 +11.73 cents	F#5	G5 -4.96 cents	G#5 -3.91 cents	A5 +2.49 cents	A#5 +13.69 cents
G1	G2	D3 -1.96 cents	G3	B3 +13.69 cents	D4 -1.96 cents	F4 +31.17 cents	G4	A#4 -3.91 cents	B4 +13.69 cents	C#5 +48.68 cents	D5 -1.96 cents	D#5 -40.53 cents	F#5 +31.17 cents	F#5 +11.73 cents	G5	G#5 -4.96 cents	A5 -3.91 cents	A#5 +2.49 cents	B5 +13.69 cents
G#1	G#2	D#3 -1.96 cents	G#3	C4 +13.69 cents	D#4 -1.96 cents	F#4 +31.17 cents	G#4	A#4 -3.91 cents	C5 +13.69 cents	D5 +48.68 cents	D#5 -1.96 cents	E5 -40.53 cents	F#5 +31.17 cents	G5 +11.73 cents	G#5	A5 -4.96 cents	A#5 -3.91 cents	B5 +2.49 cents	C5 +13.69 cents