

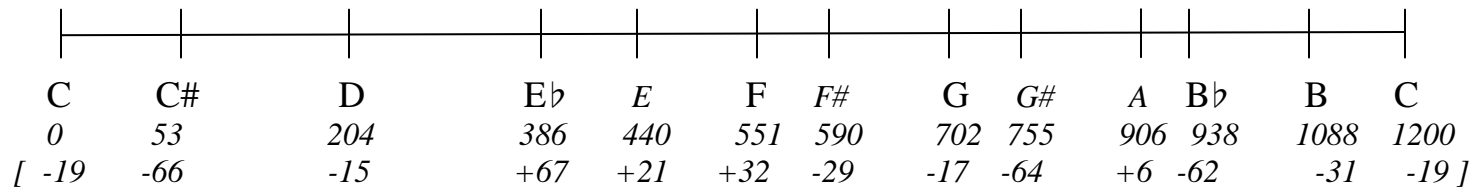
MATHIEU GROUP M12

2 - 2 - 2 - 2 - 2 - 2 - 3 - 3 - 3 - 5 - 11

(A · B · C permutations)

		<u>≈ cents</u>
A · B subgroup	{	2 · 2 · 2 = 8 = 2 → C → 0
		2 · 2 · 3 = 24 = 3 → G → 702
		2 · 2 · 5 = 20 = 5 → E → 386
		2 · 2 · 11 = 44 = 11 → F⁺ → 551
		2 · 3 · 3 = 18 = 9 → D → 204
		2 · 3 · 5 = 30 = 15 → B → 1088
		2 · 3 · 11 = 66 = 33 → C⁺ → 53
		2 · 5 · 11 = 55 → B^b → 938
		3 · 3 · 3 = 27 → A → 906
		3 · 3 · 5 = 45 → F[#] → 590
		3 · 3 · 11 = 99 → G[#] → 755
		3 · 5 · 11 = 165 → E⁺ → 440

Keyboard Mapping



(deviation of +/- cents on keyboard)

$\leftarrow a \rightarrow$	$\leftarrow b \rightarrow$	$\leftarrow c \rightarrow$	$\leftarrow a \rightarrow$	$\leftarrow d \rightarrow$	$\leftarrow e \rightarrow$	$\leftarrow d \rightarrow$	$\leftarrow a \rightarrow$	$\leftarrow b \rightarrow$	$\leftarrow f \rightarrow$	$\leftarrow b \rightarrow$	$\leftarrow d \rightarrow$	
C	C#	D	E♭	E	F	F#	G	G#	A	B♭	B	C
1	33	9	5	165	11	45	3	99	27	55	15	1
<u>1/1</u>	33/32	9/8	5/4	165/128	11/8	45/32	<u>3/2</u>	99/64	27/16	55/32	15/8	1/1
64/33	<u>1/1</u>	12/11	40/33	5/4	4/3	15/11	16/11	<u>3/2</u>	18/11	5/3	20/11	64/33
16/9	11/6	<u>1/1</u>	10/9	55/48	11/9	5/4	4/3	11/8	<u>3/2</u>	55/36	5/3	16/9
8/5	33/20	9/5	<u>1/1</u>	33/32	11/10	9/8	6/5	99/80	27/20	11/8	<u>3/2</u>	8/5
256/165	8/5	96/55	64/33	1/1	16/15	12/11	64/55	6/5	72/55	4/3	16/11	256/165
16/11	<u>3/2</u>	18/11	20/11	15/8	<u>1/1</u>	45/44	12/11	9/8	27/22	5/4	15/11	16/11
64/45	22/15	8/5	16/9	11/6	88/45	1/1	16/15	11/10	6/5	11/9	4/3	64/45
4/3	11/8	<u>3/2</u>	5/3	55/32	11/6	15/8	<u>1/1</u>	33/32	9/8	55/48	5/4	4/3
128/99	4/3	16/11	160/99	5/3	16/9	20/11	64/33	1/1	12/11	10/9	40/33	128/99
32/27	11/9	4/3	27/10	55/36	44/27	15/9	16/9	11/6	1/1	55/54	10/9	32/27
64/55	6/5	72/55	16/11	<u>3/2</u>	8/5	18/11	96/55	9/5	108/55	<u>1/1</u>	12/11	64/55
16/15	11/10	6/5	4/3	11/8	22/15	<u>3/2</u>	8/5	33/20	9/5	11/6	<u>1/1</u>	16/15

$a = 33/32 \approx 53\phi$
 $b = 12/11 \approx 151\phi$
 $c = 10/9 \approx 182\phi$
 $d = 16/15 \approx 112\phi$
 $e = 45/44 \approx 39\phi$
 $f = 55/54 \approx 32\phi$

$a+b = a+d+e = 9/8$
 $d+e = b = 12/11$
 $a+d = 11/10$
 $a+b+c = a+c+d+e = 5/4$
 $a+b+d = a+2d+e = 6/5$
 $b+f = c = 10/9$

- Chains of 3:2s**
- 1) C – G – D – A
 - 2) F – C# – G#
 - 3) E♭ – B – F#
 - 4) B♭ – E

Unusable “5ths”

E F# G# A