

Prelude No.1 – Claude Debussy

This, the first prelude for piano from book one published in 1910, is broadly a tonal composition. However, its harmonic organisation is substantially different from what might be termed the ‘clockwork’ tonality typical of earlier times during the period of common practice. And while there is pleasure in applying mutable numbers to pieces written wholly in such earlier styles, and so capturing their entire structural heart, the challenge of music from this period of extension and experimentation is that the analysis is confronted by the known, the unknown and the perhaps unknowable. That is, traditional harmonic/melodic language, an extended or enhanced language derived from the former to some degree and then other material and techniques entirely new. The pleasure here is seeing just how far mutable numbers can be go.

Tonal principles in this prelude are applied by Debussy in a rather diffuse and opaque way. The overall effect is of a shimmering tonal essence that inhabits the composition while never quite claiming its whole identity in the way traditional harmony owns a piece written by Corelli or Vivaldi. In this prelude there are short snatches of outright standard chord progressions (–e.g. at the close of the first phrase at measure five) intermingled with more ambiguous passages where the use of augmented chords, the whole tone scale and dissonant intervals within chords obfuscate or obliterate traditional harmonic connections. Although Debussy disliked the use of such terminology, the analogy drawn with visual impressionism is just; recognisable chords and note clusters are used instinctively as much as moments of ‘colour’ (–e.g. the high ninths in measure eight) as sequential objects of harmonic progression, producing overall, a hovering trancelike effect, though usually, one concluding in a recognisably traditional tonal close.

Further, when outright tonal harmonic progression is weakened by the use of such techniques, other methods of organisation are drawn into the void, namely stepwise/half-stepwise and parallel motion. These methods come more and more to the fore in later nineteenth and early twentieth century compositions as composers set out to extend, or throw off, inherited tonal practice. For example, in measure one the rising chromatic melodic motive encased within an octave/chord stepwise figure and in measures eleven and twelve, the rising parallel sequence of eight triadic chords over a bass pedal F octave. This later example is interesting because it raises the question of how best to interpret such a sequence chords: are they standard harmonic elements or colouring features? It is a matter of judgement. In this case the view is taken that there is no benefit in pressing traditional harmonic analysis beyond its reasonable competence. Rather, and rather happily, by standing back from a chord-by-chord application of traditional harmonic analysis and allowing mutable numbers to ‘take the strain’, this passage – the whole two measures of diffuse swirling chord-cloud – can be subsumed into one extended F based mutable number accommodating all the written notes. This ability of mutable numbers to extend their range beyond the strict limits of the common practice is fortunate: in that it allows a uniform analytical procedure to be employed across the whole prelude that can fully, and meaningfully, encapsulate sections of traditional harmonic progression while simultaneously encompassing and relating what cannot be so readily understood (in traditional terms) to what can.

In this prelude Debussy is standing with his feet on the edge of traditional tonality and reaching out beyond its limits. Parts of the prelude repay close traditional harmonic scrutiny while in others the focus can only be dialled back to a broader level as in measures eleven and twelve. Measure ten, the preceding measure is overtly traditional tonal harmony, down to the level of a VI–V–I perfect cadence. Yet to continue such a close analysis into measures eleven and twelve – beyond acknowledging a broad F tonality engendered by the bass octave F pedal – by analysing the rising triadic sequence in a Weberian Roman Numeral context would not be particularly helpful in promoting a sympathetic understanding of the music. Traditional tonal harmonic analysis gains firm traction in some measures while in others the techniques can do no more than slip across the surface; however, with the aid of mutable numbers such zones of inapplicability may be safely traversed, though hardly rendered intelligible in terms of traditional harmonic practice.

Amongst the composers of this period set upon exploring new ideas and techniques, two basic approaches are evident: composition by rule or by instinct. Amongst the avantgarde, bereft of the traditional tonal language of former years, atonalists found the severe application of rigorous rules helpful in guiding their passage into the new ‘weightless’ universe of tonal equality, while others trusted to instinct and intuition. This is an important distinction because while the atonalist’s rules saved them from lapsing into quasi-tonal idioms the composers that chose to be steered by their own internal compasses, and some degree of ‘dead-reckoning’, were almost inevitably (and probably intentionally) influenced in their creative choices, at all levels of granularity – notes, chords, motives, phrases, passages, sections and entire compositions – by the all pervading over-hang of the old common tonal practice. This may be illustrated by Debussy's own statements in conversation with his former composition teacher at the Paris Conservatoire: "There is no theory. You only have to listen. Pleasure is the law." and "I feel free because I have been through the mill...". The latter statement referring to his student years of conventional instruction.

Two Analyses! A and B – Provisional Conclusions

Quite to what lengths this extended use of mutable numbers can be sensibly pressed I am not sure. While it is clear from the analysis that mutable numbers can encompass the new language that Debussy was exploring, to what extent the numbers are able to enhance our understanding of it, is the question. To aid this quest the prelude has been analysed twice with one single change made between the two analyses. In analysis 'A' the chord on the second beat of measure one (and its recurrences in measures 2, 6 and 7) is interpreted as being based on the nested fundamental tone A-h1. In analysis 'B' this tone is changed to G-h1.

The difference between the raw numbers is stark. Analysis 'A' produces values lying between 10^8 and 10^9 while for analysis 'B' they are between 10^{14} and 10^{15} . However, despite the huge difference in the sums computed, the pattern in the distribution of prime factors from start to finish remains broadly similar. (More details are provided in the whole number sections that follow 'Analysis A' and 'Analysis B' below.)

Thus, provisionally, a plus and a minus. A consistent reading in the distribution of primes factors yet wildly different numerical outcomes. It is early days, probably it is a matter of experimenting with analyses over a range of the new currents abroad in twentieth century music, before drawing any firm conclusions as to the applicability of mutable numbers. However, in extending mutable number analysis outward from its principal domain of traditional harmony, it is gratifying to see (as exemplified in this analysis) that this technique is able to cope to some degree with music from beyond the confines of its native environment.

Layout of the Analysis

In the analysis below the Prelude is set out in score with the conjunction note/sums written out on a separate staff above the composition; and, although all the notes of Debussy's Prelude are faithfully reproduced, some of the orthography is different from that published in 1910 due to the limitations and conveniences of the music editor program used.

Below the staves the first row of numbers gives the value of the conjunction sums in hertz, rounded to one decimal place, beginning from a pitch standard of middle c equal to 256Hz. (Over the progress of the composition this pitch is subject to change due the application of Just Intonation.)

The principle explanatory element of the analysis, the nested harmonic series, is next below. These are abridged or summary series containing only the ratios of:

conjunction pitches *, both departing and receiving, mostly mark by an asterisk but occasionally where they coincide with a written note, a tilde,

notes ~, all the written notes in Debussy's score (in this analysis as the piece is to some extent post common practice it makes more sense to treat the minor third as just another harmonic, h19)

h1, the nested fundamental frequency of the chord/note cluster, plus [H?] a reference to the absolute fundamental nesting series, in grey typeface,

proportion of exchange to the next series/chord/note cluster, –i.e. 5:4-->

[H1] the unit, absolute unchanging fundamental tone, in grey typeface.

The grey typeface distinguishes those elements which are theoretical constructs of mutable numbers from the objective material facts of musical performance.

Due to lack of space the value of the absolute ratio [H?] can only occasionally be inserted at the base of the nested series but all the values can be read from the accompanying mutable numbers given lower down on each page. Very occasionally these nested fundamental tones meet reality, as in the last chord of the prelude.

Below the summary nested series is another row of numbers this time giving the value of the nested fundamental (h1), expressed again in hertz.

Finally at the bottom of the pages of the analysis the full number processing involved in the performance of the piece is delineated in mutable base numbers. As mentioned above, the mutable numbers encompass the more figurative and colouristic elements of the composition without any great difficulty while firmly encapsulating the more traditional harmonic elements. The outstanding example of this encompassment of a whole passage is found from measure eleven to fourteen where a single mutable number expressed in two digit sequences MBN: $192_{2764800}0_1$ and $384_{1382400}0_1$ enfolds the whole section.

Comments on the Analysis

Taken at the broadest meta-level the composition falls easily into a very familiar ternary harmonic pattern consisting of a first section, measures one to ten, centred on B flat and cadencing on the dominant F. A middle section centred on F and closing with a melodic figure finishing on its dominant note C – measures eleven to twenty. And the closing section, balancing the first section in length, extending from measure twenty one, centred again on B flat, with some reprisal of material from section one, plus a strong affirmation of the return of the tonic in the bass octaves. In overall architecture the prelude could not be more conventional.

However, within this familiar structure the detail is far from conventional in terms of traditional harmonic and melodic usage. As mentioned above, time worn notions of diatonic melody, contrary motion and a bass part governed by the logic of traditional harmonic progression are (overall) replaced by harmonic colouration, parallelism and stepwise motion, such as to detach the piece from any overriding feeling of harmonic direction. That is to say the piece ‘hovers’ rather than progresses in harmonic terms. Patches of traditional harmonic progression are present, but used more as bookends or buttresses holding the amorphous swirls and clouds of colouristic chords in check, one suspects. Yet despite Debussy's opalescent chords and chromatic melodies, the mutable numbers, perhaps because they have no implicit view concerning the ‘function’ of chords, beyond that of assigning a value, appear from the analysis below to take it all in their stride. Their neutrality so to speak, is their strength: as long as there are notes that can be expressed in terms of the harmonic series, however awkwardly distributed or remote from standard practice, a number can be ascertained and so even the most ‘difficult’ elements of the composition encompassed, though probably not rendered particularly explicable.

Looking at the prelude in detail the first measure is immediately illustrative of the challenges and difficulties that arise. There are three chords enclosing a rising half-stepwise melodic motive. The harmony consists of a standard major tonic triadic chord followed by two augmented triadic chords, the first of which is foreign to its own bass octave (the chord changed between analysis ‘A’ and ‘B’). The half-step motive provides a hand-over-hand connection running skewer-like through the middle of the rootless augmented chords. Coherence in the measure-long phrase is mostly provided by this rising motive but also to some extent there is a vague feeling of a rocking motion from tonic to dominant ‘polarity’ between beats one and three – I (VII or VI) V. Here it should be noted that although the component intervals of augmented triads are equally spaced, some sense of rootedness can arise from the configuration of the notes used – as in the bass octave F in the third chord of measure one.

The same scheme is repeated in measure two, and again in measures three/four with the motive now transferred into the bass. In this new position the harmonic implication of the motive are made more apparent – I VI ii #iiaug V – with chord VI, G major, being the basis of change between analysis ‘A’ and ‘B’. This first section then returns in measure four/five to a standard common practice chord sequence leading to a perfect cadence. The overall impression is one of Debussy setting out from the tonally familiar and making intuitive forays in the direction of tonal etiolation – by means of whole-tone and chromatic scales, rootless harmonies, tone-clusters and triadic obfuscation – before stepping back across an ill-defined boundary to a customary close.

Also of some interest is the manner in which mutable numbers handle the transition from measure 24 to 25 where in traditional harmonic terms an enharmonic exchange from E major to B flat major chords occurs. The augmented fourth interval is handled smoothly by a 7:5 mutable number calculation sometimes called the septimal tritone. In this exchange Debussy actually writes the high G# conjunction into the score (measure 24, beat 3) leaving no doubt as to what “pleased his ear” – whereas the standard augmented fourth exchange of 45:32 demands an A# conjunction which has little or no support from an E major chord. The difference between the ratios is small 1:1.4 for the septimal tritone compared to 1:1.40625 for a standard augmented fourth.

Summary (Abridged) Analyses and Just Intonation

Of course attaching the notes of the composition to particular lower order ratios in the harmonic series, as given in the abridged summary series in this analysis is only indicative of their rough positioning within the enormous range of values available from within the absolute fundamental nesting series. For example, middle c in measure one is attached to h19 in a nested series built on A-h1[H?]; however by looking at the corresponding mutable number below it, the position of this nested fundamental A-h1[H3542940] in the underlying nesting series is the very large ratio H3,542,940! Multiplying out a few figures reveals the difference between the roughly assigned value the precise Just interval implied by the mutable number.

middle c assigned as h19 from A-h1: $A-H3542940 \times 19$ = C-H67315860

middle c as a just minor third to A-h1: $A-H3542940 \times 16 \times 6/5$ = C-H68024448

Naturally, the mutable number analysis intends the latter of these two figures, the Just interval is the actual target value, yet to fill these summary series with such huge figures would be impractical regarding spacing and unhelpful to the understanding; however a more thoroughgoing whole number version of the analysis is provided toward the end of this document.

Whole Number Analysis

In the whole number analysis charting the course of the piece as it draws its own particular course across the unending ocean of numbers, it can be seen that this analysis has some different characteristics in comparison to more standard common practice compositions. The hallmark of the average/normal common practice composition is for the mutable number sums to begin dominated by factors of three and to end with this ‘threeness’ being worn away to nothing or almost nothing, while the factors of two begin relatively scarce and subsequently build up relentlessly to dominate towards the final cadence. However, in Debussy’s Prelude, factors of two are present in significant quantities throughout the piece rather than starting in low quantities and building up steadily as the music progresses. Here they fluctuate up and down, are at their highest level in measures 8 to 16 and their lowest level at measure 24. Secondly, the linear reduction in the factors of three from an opening maximum is not present. The lowest point for factors of three comes in the middle of the piece, rather than at its end and as with ‘twoness’ they are a fluctuating affair.

Thirdly the factor five is present in larger quantities than is normally found in music from the common practice, and this no doubt is due to the relative prevalence of the less energetic exchanges involving the major and minor third being used in substantial numbers in preference to the more robust exchanges of a fourth and fifth – e.g. measures 23 and 24. And even where the augmented fourth is pressed into action

(measure 24, beat 3) results in a slight ‘slithering off’ into the less robust septimal 7:5 tritone. This trend toward a relatively greater use of the less energetic exchanges lying further up the harmonic series appears to be a characteristic of the later nineteenth century and particularly of the early twentieth centuries: Perhaps related to composers striving to find some different way of doing ‘tonal arithmetic’. The process is remarkably analogous to the internal evolution of some stars: as they run out of their main fuel to manufacture Helium they are forced to turn to increasingly desperate measures involving more highly wrought but less dynamic processes. Similarly composers in their efforts to find some substitute for the perpetual motive power produced by tonic-dominant harmony, looked to these more rarefied but less directional exchanges lying further up the harmonic series.

Reading Whole Number Analyses

| Bar | Proportion | Fundamental Series × Nested Series (both Departing and Receiving Exchanges) | | | | | | Conjunction Sum Computed | Prime Factors | | | | |
|-----|--------------------------|--|---|----|---|---------|---|-----------------------------|---------------|-----------|-----|------|---|
| --- | ----- | ----- | | | | | | ----- | ----- | | | | |
| 1. | Fundamet'l Series H1->H? | 3779136 | × | 60 | = | 3542940 | × | 64 | = | 226748160 | 2^8 | 3^11 | 5 |
| | 15/16 (16:15) (h1) = | 3542940 | × | 64 | = | 2834352 | × | 80 | = | 226748160 | 2^8 | 3^11 | 5 |

For the most part the meaning of these decimal numbers is made straightforwardly clear by the column titles, however some information as to how they are generated and related may be helpful.

| | | |
|----------------|----------------|----------------|
| A-h60*-----> | A-h64*-----> | A-h80* -16 |
| F-h24~ | G-h28~ | F-h64*-----> |
| D-h20~ | D#h22~ | A-h40~ |
| A#h16~ | C-h19~ | F-h32~ |
| F-h12~ | B-h18~ | C#h25~ |
| A#h8~ | G-h14~ | A-h20~ |
| A#h4~ | A-h8~ | F-h8~ |
| A#h1[H3779136] | A-h4~ | F-h4~ |
| 16:15--> | A-h1[H3542940] | F-h1[H2834352] |
| [H1] | 5:4--> | 3:4--> |
| | [H1] | [H1] |

The numbers are generated by a Perl script that works out the lowest sequence of whole numbers that are related by the succession of Just intonation proportions characterising the harmonic progression of the entire composition. For analysis A the proportions begin: 16:15, 5:4 and 3:4 . (In analysis B they're 6:5, 9:8 and 3:4 – which incidentally I believe is a better characterization.) This lowest value sequence of whole numbers begins as shown above with 3779136 for analysis A. Thus if an immense fundamental nesting harmonic series is imagined, ranging from H1 to H3779136 (with a nested series built upon it – h1 to h60) and this huge opening nesting ratio is multiplied by $\frac{15}{16}$ the product is 3542940 – the whole number basis of the next chord characterization. (And similarly the sequence of whole numbers proceeds to the final cadence.) Looking again at the table above, the opening fundamental nesting series ratio 3779136 is multiplied by the proportion $\frac{15}{16}$ on the next line below and the product 3542940 is recorded immediately under the opening ratio. Further to the right on line one the opening ratio 3779136 is multiplied by 60 and the succeeding ratio 3542940 multiplied by 64 – the compass of the nested series. The (equal) sum of both these operations follows: 226748160; with its prime factors appended. Thus each line records the equality of sums that defines the magnitude of a single mutable base number.

Prelude No.1, Analysis A

Lent et grave (♩ = 44)

doux et soutenu

Claude Debussy

| | A-853.3Hz | A-853.3Hz | F-682.6Hz | A-853.3Hz | A-853.3Hz | F-682.6Hz |
|--------------------------------|---------------|---------------|---------------|---------------|-----------------|-----------------|
| Conjunctions: | A-h60*---> | A-h64*---> | A-h80* -16 | A-h60*---> | A-h64*---> | A-h80* -16 |
| Notes: { | F-h24~ | G-h28~ | F-h64*---> | F-h48* +12 | G-h28~ | F-h64*---> |
| | D-h20~ | D#h22~ | A-h40~ | F-h24~ | D#h22~ | A-h40~ |
| | A#h16~ | C-h19~ | F-h32~ | D-h20~ | C-h19~ | F-h32~ |
| | F-h12~ | B-h18~ | C#h25~ | A#h16~ | B-h18~ | C#h25~ |
| | A#h8~ | G-h14~ | A-h20~ | F-h12~ | G-h14~ | A-h20~ |
| | A#h4~ | A-h8~ | F-h8~ | A#h8~ | A-h8~ | F-h8~ |
| Nested Fund'l: | A#h1 [H?] | A-h4~ | F-h4~ | A#h4~ | A-h4~ | F-h4~ |
| Proportions: | 16:15--> | A-h1 [H?] | F-h1 [H?] | A#h1 [H?] | A-h1 [H3542940] | F-h1 [H2834352] |
| | [H1] | 5:4--> | 3:4--> | 16:15--> | 5:4--> | 3:4--> |
| Absolute Fundamental | [H1] | [H1] | [H1] | [H1] | [H1] | [H1] |
| Nested Fundamental Frequencies | A#14.222...Hz | A-13.333...Hz | F-10.666...Hz | A#14.222...Hz | A-13.333...Hz | F-10.666...Hz |

Analysis in Mutable Base Numbers

$$\text{MBN: } 60_{3779136}0_1 = 64_{3542940}0_1 = 80_{2834352}0_1 - 16_{2834352}0_1$$

$$\begin{aligned} (\text{Decimal } 226,748,160) &= 64_{2834352}0_1 = 48_{3779136}0_1 + 12_{3779136}0_1 \\ &= 60_{3779136}0_1 = 64_{3542940}0_1 = 80_{2834352}0_1 - 16_{2834352}0_1 \\ &= 64_{2834352}0_1 \text{ ----->} \end{aligned}$$

F-682.6Hz G-758.5Hz E-632.1Hz A-842.8Hz F-1348.5Hz D-1123.7Hz D-1123.7Hz G-749.2Hz

| | | | | | | | | |
|----------|------------|------------|-----------|------------|------------|------------|------------|-----------|
| ---- | F-h48*---- | G-h64*--> | G-h96*-16 | A-h128*--> | A-h120*+72 | D-h160*--> | D-h128~--> | D-h96*-32 |
| ---- | F-h56*+8 | E-h80*---- | E-h96*+32 | A#h64* | A#h128~ | A-h96~ | G-h64~--> | |
| A-h30~ | A-h36~ | A-52~ | A#h68~ | F-h48~ | F-h96~ | F-h76~ | D-h48~ | |
| G-h28~ | G-h32~ | G-h48~ | G-h56~ | A#h32~ | D-h80~ | D-h64~ | A#h38~ | |
| D-h20~ | D-h24~ | D#h38~ | E-h48~ | F-h24~ | A#h64~ | A-h48~ | G-h32~ | |
| G-h14~ | G-h16~ | G-h24~ | G-h28~ | D-h20~ | F-h48~ | F-h38~ | D-h24~ | |
| F-h12~ | F-h14~ | F-h21~ | F-h25~ | D-h10~ | D-h40~ | D-h32~ | A#h19~ | |
| A#h8~ | B-h10~ | C-h16~ | C#h20~ | A#h1[H?] | D-h20~ | A-h24~ | G-h16~ | |
| A#h4~ | B-h5~ | C-h8~ | C#h10~ | 1:1-> | D-h10~ | F-h19~ | G-h1[H?] | |
| A#h1[H?] | G-h1[H?] | C-h1[H?] | Ah1[H?] | [H1] | A#h1[H?] | D-h16~ | 3:4-> | |
| 6:5-> | 3:2-> | 6:5-> | 15:16-> | | 4:5-> | D-h8~ | [H1] | |
| [H1] | [H1] | [H1] | [H1] | | [H1] | D-h1[H?] | | |
| | | | | | | 3:4-> | | |
| | | | | | | [H1] | | |

A#14.222Hz

G-11.851...Hz

C-7.901234567Hz

A-6.584362139Hz

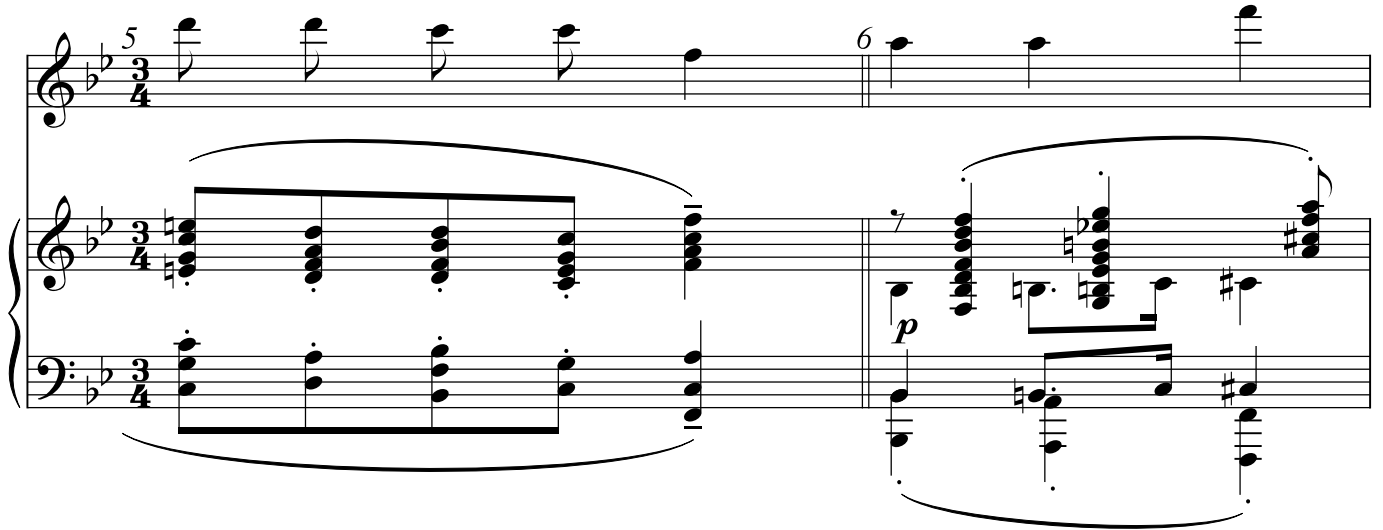
A#7.023319615Hz

D-8.779149519Hz

G-11.70553269Hz

-->

$$\begin{aligned}
 48_{3779136}0_1 &= 56_{3149280}0_1 \\
 &+ 8_{3149280}0_1 \\
 &= 64_{3149280}0_1 = 96_{2099520}0_1 \\
 &- 16_{2099520}0_1 \\
 &= 80_{2099520}0_1 = 96_{1749600}0_1 \\
 &+ 32_{1749600}0_1 \\
 &= 128_{1749600}0_1 = 120_{1866240}0_1 \\
 &+ 72_{1866240}0_1 \\
 &= 192_{1866240}0_1 \\
 &- 32_{1866240}0_1 \\
 &= 160_{1866240}0_1 = 128_{2332800}0_1 = 96_{3110400}0_1 \\
 &- 32_{3110400}0_1 \\
 &= 64_{3110400}0_1 \\
 &--->
 \end{aligned}$$



D-1123.7Hz D-1123.7Hz C-1011.4Hz C-1011.4Hz F-674.2Hz A-842.8Hz A-842.8Hz F-1348.5Hz

| | | | | | | | |
|---------------|----------|----------|----------|-----------|-------------|----------------|---------------|
| D-h72*--> | D-h64*-> | D-h80*-8 | | | | | F-h256*-----> |
| --> G-h48*+24 | D-h32~ | C-h72*-> | C-h64*-> | C-h96*-32 | A-120*----> | A-h128*--> | A-h160~ +96 |
| E-h40~ | A-h24~ | A#h32~ | C-h32~ | F-h64*--> | F-h96~+24 | G-h112~ | F-h128~ |
| C-h32~ | F-h19~ | F-h24~ | G-h24~ | C-h48~ | D-h80~ | D#h88~ | C#h100~ |
| G-h24~ | D-h16~ | D-h20~ | E-h20~ | A-h40~ | A#h64~ | B-h72 | A-h80~ |
| E-h20~ | A-h12~ | A#h16~ | C-h16~ | F-h32~ | F-h48~ | G-h56~ | C#h50~ |
| C-h16~ | D-h8~ | F-h12~ | G-h12~ | A-h20~ | D-h40~ | D#h44~ | C#h25~ |
| G-h12~ | D-h1[H?] | A#h8~ | C-h8~ | C-h12~ | A#h32~ | C-h38~ | F-h16~ |
| C-h8~ | 5:4-> | A#h1[H?] | C-h1[H?] | F-h8~ | F-h24~ | B-h36~ | F-h8~ |
| C-h1[H?] | [H1] | 8:9--> | 3:2--> | F-h1[H?] | A#h16~ | G-h28~ | F-h1[H?] |
| 8:9-> | | [H1] | [H1] | 3:2--> | A#h8~ | C-h19~ | 3:4-> |
| [H1] | | | | [H1] | A#h1[H?] | B-h18~ | [H1] |
| | | | | | 16:15-> | A-h16~ | |
| | | | | | [H1] | A-h8~ | |
| | | | | | | A-h1[H1749600] | |
| | | | | | | 5:4--> | |
| | | | | | | [H1] | |

D-17.55829904Hz

C-15.80246913Hz

C-15.60737692Hz

A#14.04663923Hz

F-10.53497942Hz

A#7.02331963Hz

A-6.584362138Hz

F-5.26748971Hz

-->

$48_{4147200}0_1$

$+ 24_{4147200}0_1$

$72_{4147200}0_1 = 64_{4665600}0_1 = 80_{3732480}0_1$

$- 8_{3732480}0_1$

$= 72_{3732480}0_1 = 64_{4199040}0_1 = 96_{2799360}0_1$

$- 32_{2799360}0_1$

$= 64_{2799360}0_1 = 96_{1866240}0_1$

$+ 24_{1866240}0_1$

$= 120_{1866240}0_1 = 128_{1749600}0_1$

Continued ----->

$= 160_{1399680}0_1$

$+ 96_{1399680}0_1$

$= 256_{1399680}0_1-->$

A-1685.6Hz

A-1685.6Hz

F-2697Hz

D-2247.5Hz

G-1498.3Hz

E-2497.2Hz

| | | | | | |
|------------------|-------------|---------------|--------------|---------------|---------------|
| A-h240*-----> | A-h256*---> | F-h512*-----> | F-h384*-64 | D-h384*-128 | E-h320*-----> |
| ---> F-h192* +48 | G-h112~ | A-h320*+192 | D-h320*----> | G-h256*-----> | G-h192~+128 |
| F-h96~ | D#h88~ | A-h160~ | G-h208~ | G-h128~ | G-h96~ |
| D-h80~ | B-h72~ | F-h128~ | G-h104~ | F-h96~ | F-h84~ |
| A#h64~ | G-h56~ | C#h100~ | F-h96~ | A-h72~ | A-h52~ |
| F-h48~ | D#h44~ | A-h80~ | A-h60~ | G-h64~ | G-h48~ |
| D-h40~ | B-h36~ | F-h64~ | G-h52~ | D-h48~ | D#h38~ |
| A#h32~ | G-h28~ | C#h50~ | D-h40~ | A-h36~ | A-h26~ |
| F-h24~ | C-h19~ | F-h32~ | A-h30~ | G-h32~ | G-h24~ |
| A#h16~ | B-h18~ | C#h25~ | G-h26~ | F-h28~ | F-h21~ |
| A#h8~ | A-h16~ | F-h16~ | F-h24~ | B-h20~ | C-h16~ |
| A#h1[H?] | A-h8~ | F-h8~ | A#h16~ | B-h10~ | C-h8~ |
| 16:15--> | A-h1[H?] | F-h1[H?] | A#h8~ | G-h1[H?] | C-h1[H?] |
| [H1] | 5:4--> | 3:4--> | A#h1[H?] | 3:4-> | 6:5-> |
| | [H1] | [H1] | 6:5-> | [H1] | [H1] |
| | | | [H1] | | |

A#7.023319613Hz

A-6.584362138Hz

F-5.26748971Hz

A#7.023319613Hz

G-5.852766344Hz

C-7.803688459Hz

-->

$$\begin{aligned}
 &= 192_{1866240}0_1 \\
 &+ 48_{1866240}0_1 \\
 &= 240_{1866240}0_1 = 256_{1749600}0_1 = 320_{1399680}0_1 \\
 &\quad + 192_{1399680}0_1 \\
 &= 512_{1399680}0_1 = 384_{1866240}0_1 \\
 &\quad - 64_{1866240}0_1 \\
 &= 320_{1866240}0_1 = 384_{1555200}0_1 \\
 &\quad - 128_{1555200}0_1 \\
 &= 256_{1555200}0_1 = 192_{2073600}0_1 \\
 &\quad - 128_{2073600}0_1 \\
 &= 320_{2073600}0_1 \text{ ---->}
 \end{aligned}$$

(E-2497.2Hz)

A-1664.8Hz

D-2219.7Hz

D-1109.9Hz

G-739.9Hz

D-1109.9Hz

C-998.9Hz

C-1997.7Hz

-> E-h384*-128 D-h320*--> D-h256*-128
 A-h256*----> A-h240*+80 D-h128~----> D-h96*-32 D-h72*--> D-h64*-> D-h80*-8 C-h192*->
 G-h224~ F-h192~ A-h96~ G-h64~--> G-h48*+24 D-h32~ C-h72*-> C-h64*-> C-h96*+96
 G-h112~ A#h128~ F-h76~ D-h48~ E-h40~ A-h24~ A#h32~ C-h32~ F-h64~
 F-h100~ F-h96~ D-h64~ A#h38~ C-h32~ F-h19~ F-h24~ G-h24~ C-h48~
 A#h68~ D-h80~ A-h48~ G-h32~ G-h24~ D-h16~ D-h20~ E-h20~ A-h40~
 G-h56~ A#h64~ F-h38~ D-h24~ E-h20~ A-h12~ A#h16~ C-h16~ F-h32~
 E-h48~ F-h48~ D-h32~ A#h19~ C-h16~ D-h8~ F-h12~ G-h12~ A-h20~
 A#h34~ D-h40~ A-h24~ G-h16~ G-h12~ D-h1[H?] A#h8~ C-h8~ C-h12~
 G-h28~ A#h32~ F-h19~ G-h1[H?] C-h8~ 5:4-> A#h1[H?] C-h1[H?] F-h8~
 F-h25~ F-h24~ D-h16~ 3:4--> C-h1[H?] [H1] 8:9--> 3:2--> F-h1[H?]
 C#h20~ D-h20~ D-h8~ [H1] 8:9--> [H1] [H1] 1:1-->
 C#h10~ D-h10~ D-h1[H?] [H1]
 Ah1[H?] A#h1[H?] 3:4-->
 15:16--> 4:5--> [H1]
 [H1] [H1]
 D-17.34152991Hz C-15.60737692Hz
 C-15.41469325Hz G-11.56101994Hz A#13.87322393Hz F-10.40491795Hz
 D-8.670764955Hz A#6.936611964Hz
 A-6.503073716Hz

$$= 384_{1728000}0_1$$

$$- 128_{1728000}0_1$$

$$= 256_{1728000}0_1 = 240_{1843200}0_1$$

$$+ 80_{1843200}0_1$$

$$= 320_{1843200}0_1 = 256_{2304000}0_1$$

$$- 128_{2304000}0_1$$

$$= 128_{2304000}0_1 = 96_{3072000}0_1$$

$$- 32_{3072000}0_1$$

$$= 64_{3072000}0_1 = 48_{4096000}0_1$$

$$+ 24_{4096000}0_1$$

$$= 72_{4096000}0_1 = 64_{4608000}0_1 \text{ ----->}$$

Continued from previous page ----->

$$\begin{aligned}
 &= 80_{3686400}0_1 \\
 &- 8_{3686400}0_1 \\
 &= 72_{3686400}0_1 = 64_{4147200}0_1 = 96_{2764800}0_1 \\
 &\quad + 96_{2764800}0_1 \\
 &= 192_{2764800}0_1 \rightarrow
 \end{aligned}$$

11 *doux mais en'dehors* 12

C-1997.7Hz.....-->

| | | | | | | | |
|-------------------|---------------|--------------|------------|------------|------------|------------|------------|
| ----> C-h192*---- | C-h192*-----> | C-h192*----> | C-h192*--> | C-h192*--> | C-h192*--> | C-h192*--> | C-h192*--> |
| G-h144~ | F-h128~ | C-h96~ | F-h64~ | G-h72~ | A-h80~ | A#h84~ | C-h96~ |
| G-h72~ | D-h106~ | A#h84~ | C-h48~ | D-h53~ | E-h60~ | F-h64~ | G-h72~ |
| C-h48~ | F-h64~ | G-h72~ | A-h40~ | A#h42~ | C-h48~ | D-h53~ | D#h56~ |
| G-h36~ | D-h53~ | D#h56~ | F-h32~ | G-h36~ | A-h40~ | A#h42~ | C-h48~ |
| D#h28~ | A-h40~ | A#h42~ | C-h24~ | D-h26~ | E-h30~ | F-h32~ | G-h36~ |
| C-h24~ | F-h32~ | G-h36~ | A-h20~ | A#h21~ | C-h24~ | D-h26~ | D#h28~ |
| G-h18~ | D-h26~ | D#h28~ | F-h16~ | G-h18~ | A-h20~ | A#h21~ | C-h24~ |
| D#h14~ | A-h20~ | A#h21~ | F-h8~ | F-h8~ | F-h8~ | F-h8~ | F-h8~ |
| C-h12~ | F-h16~ | G-h18~ | F-h4~ | F-h4~ | F-h4~ | F-h4~ | F-h4~ |
| F-h8~ | D-h13~ | D#h14~ | F-h1 | F-h1 | F-h1 | F-h1 | F-h1[H?] |
| F-h4~ | F-h8~ | F-h8~ | 1:1-> | 1:1-> | 1:1-> | 1:1-> | 2:1-----> |
| F-h1[H?] | F-h4~ | F-h4~ | [H1] | [H1] | [H1] | [H1] | [H1] |
| 1:1-> | F-h1 | F-h1 | | | | | |
| [H1] | 1:1-> | 1:1-> | | | | | |
| | [H1] | [H1] | | | | | |

F-10.40491795Hz.....-->

MBN: 192₂₇₆₄₈₀₀0₁ ----->

C-1997.7Hz.....-->

| | | | | | | | |
|---------------|-------------|----------------|------------|------------|------------|------------|------------|
| ----> C-h384~ | C-h384*---- | C-h384*-----> | C-h384*--> | C-h384*--> | C-h384*--> | C-h384*--> | C-h384*--> |
| C-h192~ | A#h336~ | F-h256~ | A#h168~ | G-h144~ | F-h128~ | G-h144~ | A#h168~ |
| G#h76~ | G-h288~ | D#h224~ | C#h100~ | D#h112~ | C-h96~ | D-h106~ | F-h128~ |
| D#h56~ | A#h168~ | C-h192~ | A#h84~ | A#h84~ | G#h76~ | B-h88~ | C#h100~ |
| C-h48~ | G-h144~ | F-h128~ | G#h76~ | G-h72~ | F-h64~ | D-h53~ | A#h84~ |
| G#h38~ | A#h84~ | D#h112~ | F-h64~ | D#h56~ | C-h48~ | B-h44~ | F-h64~ |
| D#h28~ | F-h64~ | C-h96~ | C#h50~ | A#h42~ | G#h38~ | G-h36~ | C#h50~ |
| C-h24~ | D-h53~ | G-h72~ | G#h38~ | G-h36~ | F-h32~ | F-h16~ | A#h42~ |
| G#h19~ | A#h42~ | D#h56~ | F-h32~ | D#h28~ | F-h16~ | F-h8~ | F-h16~ |
| F-h16~ | F-h32~ | C-h48~ | C#h25~ | F-h16~ | F-h8~ | F-h1[H?] | F-h8~ |
| F-h8~ | D-h26~ | G-h36~ | F-h16~ | F-h8~ | F-h1[H?] | 1:1--> | F-h1[H?] |
| F-h1[H?] | A#h21~ | D#h28~ | F-h8~ | F-h1[H?] | 1:1--> | [H1] | 4:3--> |
| 1:1-> | F-h16~ | C-h24~ | F-h1[H?] | 1:1--> | [H1] | | [H1] |
| [H1] | F-h8~ | F-h16~ | 1:1--> | [H1] | | | |
| | F-h1[H?] | F-h8~ | [H1] | | | | |
| | 1:1--> | F-h1[H1382400] | | | | | |
| | [H1] | 1:1--> | | | | | |
| | | [H1] | | | | | |

F-5.202458973Hz.....-->

MBN: 384₁₃₈₂₄₀₀0₁

----->

E-1248.6Hz

B1872.9Hz

B1872.9Hz

C1997.7Hz

C1997.7Hz

C1997.7Hz

| | | | | | |
|-----------------|--------------|-------------|-------------|-------------|----------------|
| --> C-h512*-192 | B-h576*----> | B-h512*---> | C-h512*---> | C-h384*---> | C-h256*---> |
| E-h320-----> | E-h384*+192 | D#h320~ | B-h480*+32 | A-h320~ | C-h128~ |
| C-h256~ | C#h320~ | B-h256~ | E-h320~ | A-h160~ | E-h80~ |
| E-h160~ | A-h256~ | D#h160~ | C-h256~ | G-h144~ | C-h64~ |
| G-h96~ | C#h160~ | B-h128~ | E-h160~ | D-h104~ | G-h48~ |
| G-h48~ | F-h100~ | F#h96~ | C-h128~ | C-h96~ | E-h40~ |
| C-h32~ | E-h96~ | B-h64~ | G-h96~ | A-h80~ | D-h36~ |
| G-h24~ | F-h50~ | F#h48~ | C-h64~ | G-h72~ | C-h32~ |
| C-h16~ | E-h48~ | B-h32~ | G-h48~ | D-h52~ | A-h26~ |
| C-h1[H?] | A-h32~ | F#h24~ | C-h32~ | C-h48~ | G-h24~ |
| 6:5--> | F-h25~ | B-h16~ | G-h24~ | D-h26~ | E-h20~ |
| [H1] | E-h24~ | B-h1[H?] | C-h16~ | C-h24~ | C-h16~ |
| | A-h16~ | 15:16--> | C-h1[H?] | F-h16~ | A-h13~ |
| | A-h1[H?] | [H1] | 3:4--> | F-h1[H?] | G-h12~ |
| | 8:9--> | | [H1] | 2:3--> | E-h10~ |
| | [H1] | | | [H1] | C-h1[H2073600] |
| | | | | | 3:2--> |
| | | | | | [H1] |

C-3.901844231Hz

A-3.251536859Hz

B-3.657978966Hz

C-3.901844231Hz

F-5.202458974Hz

C-7.803688461Hz

-->

$$\begin{aligned}
 &= 512_{1036800}0_1 \\
 &- 192_{1036800}0_1 \\
 &= 320_{1036800}0_1 = 384_{864000}0_1 \\
 &\quad + 192_{864000}0_1 \\
 &= 576_{864000}0_1 = 512_{972000}0_1 = 480_{1036800}0_1 \\
 &\quad + 32_{1036800}0_1 \\
 &= 512_{1036800}0_1 = 384_{1382400}0_1 = 256_{2073600}0_1 \text{ ---->}
 \end{aligned}$$

C1997.7Hz

C1997.7Hz

G1498.3HzHz

F1311.0Hz

F1311.0Hz

----> C-h384*---->

A-h320~

A-h160~

G-h144~

E-h120~

D-h104~

C-h96~

A-h80~

G-h72~

E-h60~

D-h52~

C-h48~

E-h30~

D-h26~

C-h24~

F-h16~

F-h1[H1382400]

2:3-->

[H1]

C-h256*--->

C-h128~

E-h80~

C-h64~

G-h48~

E-h40~

D-h36~

C-h32~

A-h26~

G-h24~

E-h20~

C-h16~

A-h13~

G-h12~

E-h10~

C-h1[H2073600]

5:8-->

[H1]

C-h160*-80

G#h128~

G-h120*---->

D#h96~

C-h80~

G#h64~

F-h56~

D-h44~

C-h40~

F-h28~

D-h22~

C-h20~

F-h14~

D-h11~

C-h10~

G#h8~

D#h6~

G#h4~

G#h1[H3317760]

16:15-->

[H1]

G-h128~-16

F-h112*---->

D-h96~

B-h80~

G-h64~

F-h56~

D-h48~

F-h28~

D-h24~

F-h14~

D-h12~

G-h8~

D-h6~

G-h4~

G-h1[H3110400]

8:7-->

[H1]

F-h128~--->

C-h96~

A-h80~

F-h64~

C-h48~

C-h24~

C-h12~

F-h8~

C-h6~

F-h4~

F-h1[H2721600]

3:4-->

[H1]

F-5.202458974Hz

C-7.803688461Hz

G#12.48590154Hz

G-11.70553269Hz

F-h10.24234111Hz

$$\begin{aligned}
 \text{---->} &= 384_{1382400}0_1 = 256_{2073600}0_1 = 160_{3317760}0_1 \\
 &\quad - 80_{3317760}0_1 \\
 &= 120_{3317760}0_1
 \end{aligned}$$

$$\begin{aligned}
 &= 128_{3110400}0_1 \\
 &\quad - 16_{3110400}0_1 \\
 &= 112_{3110400}0_1 = 128_{2721600}0_1 \text{ ---->}
 \end{aligned}$$

F1311.0Hz

G#786.6Hz

D#590.0Hz

D#590.0Hz

A#884.9Hz

---> F-h96*--->
 D-h20~
 A#h16~
 F-h12~
 D-h10~
 A#h8~
 A#h1[H?]
 5:6-->
 [H1]

F-h80*+32
 G#h48*--->
 F-h20~
 C#h16~
 G#h12~
 F-h10~
 C#h8~
 C#h1[H?]
 4:3-->
 [H1]

G#h64*-16
 D#h48*--->
 C-h20~
 G#h16~
 D#h12~
 C-h10~
 G#h8~
 G#h1[H?]
 5:6-->
 [H1]

D#h40*--->
 D#h20~
 B-h16~
 F#h12~
 D#h10~
 B-h8~
 B-h1[H?]
 4:5-->
 [H1]

A#h48*--->
 D#h32*+16
 G-h20~
 D#h16~
 A#h12~
 G-h10~
 D#h8~
 D#h1[H?]
 4:3-->
 [H1]

A#13.65645481Hz

C#16.38774577Hz

G#12.29080933Hz

B-14.74897119Hz

D#18.43621399Hz

$$\begin{aligned}
 ---> &= 96_{3628800}0_1 \\
 &= 80_{4354560}0_1 \\
 &\quad - 32_{4354560}0_1 \\
 &= 48_{4354560}0_1 \\
 &\quad = 64_{3265920}0_1 \\
 &\quad \quad - 16_{3265920}0_1 \\
 &\quad = 48_{3265920}0_1 \\
 &\quad \quad = 40_{3919104}0_1 \\
 &\quad \quad \quad = 32_{4898880}0_1 \\
 &\quad \quad \quad \quad + 16_{4898880}0_1 \\
 &\quad \quad \quad = 48_{4898880}0_1 \quad ---->
 \end{aligned}$$

F-1327.4Hz

F-1327.4Hz

A-1659.3Hz

E-2488.9Hz

E-2488.9Hz

G#1555.6Hz

F-h96*--->
 --> A#h64*+32
 D-h40~
 A#h32~
 F-h24~
 D-h20~
 A#h16~
 F-h12~
 D-h10~
 A#h8~
 A#h1[H?]
 5:6-->
 [H1]

F-h80*--->
 F-h40~
 C#h32~
 G#h24~
 F-h20~
 C#h16~
 G#h12~
 F-h10~
 C#h8~
 C#h1[H?]
 4:5-->
 [H1]

A-h80*-->
 F-h64*+16
 A-h40~
 F-h32~
 C-h24~
 A-h20~
 F-h16~
 C-h12~
 A-h10~
 F-h8~
 F-h1[H?]
 4:5-->
 [H1]

E-h96*-->
 A-h64*+32
 C#h40~
 A-h32~
 E-h24~
 C#h20~
 A-h16~
 E-h12~
 C#h10~
 A-h8~
 A-h1[H?]
 5:6-->
 [H1]

E-h80*-->
 E-h40~
 C-h32~
 G-h24~
 E-h20~
 C-h16~
 G-h12~
 E-h10~
 C-h8~
 C-h1[H?]
 4:5-->
 [H1]

E-h64*--24
 G#h40--->
 E-h32~
 B-h24~
 G#h20~
 E-h16~
 B-h12~
 G#h10~
 E-h8~
 E-h1[H?]
 7:5-->
 [H1]

E-38.888...Hz

C-31.111...Hz

A-25.92592592Hz

F-20.74074074Hz

D#16.59259259Hz

A#13.82716049Hz

$$\rightarrow = 64_{3674160}0_1$$

$$+ 32_{3674160}0_1$$

$$= 96_{3674160}0_1$$

$$= 80_{4408992}0_1$$

$$= 64_{5511240}0_1$$

$$+ 16_{5511240}0_1$$

$$= 80_{5511240}0_1$$

$$= 64_{6889050}0_1$$

$$+ 32_{6889050}0_1$$

$$= 96_{6889050}0_1 = 80_{8266860}0_1 = 64_{10333575}0_1 \rightarrow$$

A#1777.8Hz D#1185.2Hz C-1975.3Hz F-1316.9Hz A#1755.8Hz D#1170.6Hz C-1950.9Hz F1300.6Hz

| | | | | | | | |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| A#h64*---> | A#h192*-64 | C-h160*---> | C-h192*-64 | A#h128*---> | A#h192*-64 | C-h160*---> | C-h192*-64 |
| --> G#h56*+8 | D#h128*---> | D#h96*+64 | F-h128*---> | F-h96*+32 | D#h128*---> | D#h96*+64 | F-h128*---> |
| F-h24~ | G-h80~ | G#h64~ | C#h100~ | F-h48~ | G-h80~ | G#h64~ | C#h100~ |
| D-h20~ | D#h64~ | E-h50~ | A-h80~ | D-h40~ | D#h64~ | E-h50~ | A-h80~ |
| A#h16~ | B-h25~ | C-h40~ | F-h64~ | A#h32~ | B-h25~ | C-h40~ | F-h64~ |
| F-h12~ | G-h40~ | G#h32~ | C#h50~ | F-h20~ | G-h40~ | G#h32~ | C#h50~ |
| D-h10~ | D#h32~ | E-h25~ | A-h40~ | D-h20~ | D#h32~ | E-h25~ | A-h40~ |
| A#h8~ | B-h25~ | C-h20~ | F-h32~ | A#h16~ | B-h25~ | C-h20~ | F-h32~ |
| F-h6~ | G-h20~ | G#h16~ | C#h25~ | F-h12~ | G-h20~ | G#h16~ | C#h25~ |
| A#h2~ | D#h1[H?] | G#h1[H?] | A-h20~ | A#h8~ | D#h1[H?] | G#h1[H?] | A-h20~ |
| A#h1~[H?] | 3:4--> | 6:5--> | F-h8~ | A#h4~ | 3:4--> | 6:5--> | F-h8~ |
| 3:1--> | [H1] | [H1] | F-h4~ | A#h1[H?] | [H1] | [H1] | F-h4~ |
| [H1] | | | F-h1[H?] | 3:2--> | | | F-h1[H?] |
| | | | 3:4--> | [H1] | | | 3:4--> |
| | | | [H1] | | | | [H1] |

A#27.777...Hz G#12.34567901Hz A#13.71742112Hz G#12.19326322Hz
D#9.259259257Hz F-10.28806584Hz D#9.144947414Hz F-10.16105268Hz

$$\begin{aligned}
 &= 56_{7381125}0_1 \\
 &+ 8_{7381125}0_1 \\
 &= 64_{7381125}0_1 = 192_{2460375}0_1 \\
 &\quad - 64_{2460375}0_1 \\
 &= 128_{2460375}0_1 = 96_{3280500}0_1 \\
 &\quad + 64_{3280500}0_1 \\
 &= 160_{3280500}0_1 = 192_{2733750}0_1 \\
 &\quad - 64_{2733750}0_1 \\
 &= 128_{2733750}0_1 = 96_{3645000}0_1 \\
 &\quad + 32_{3645000}0_1 \\
 &= 128_{3645000}0_1 = 192_{2430000}0_1 \\
 &\quad - 64_{2430000}0_1 \\
 &= 128_{2430000}0_1 \text{ ----->}
 \end{aligned}$$

Continued from previous page ----->

$$\begin{aligned}
 &= 96_{3240000}0_1 \\
 &+ 64_{3240000}0_1 \\
 &= 160_{3240000}0_1 = 192_{2700000}0_1 \\
 &\quad - 64_{2700000}0_1 \\
 &= 128_{2700000}0_1
 \end{aligned}$$

(... Danseuses de Delphes)

| F-1300.6Hz | | F-1300.6Hz | | F-1300.6Hz | F-1300.6Hz | F-1300.6Hz |
|-----------------|----------------|-----------------|----------------|-----------------|------------|-----------------|
| --> F-h96*--> | F-h128~--> | F-h96*--> | F-h128~--> | F-h96*--> | F-h96*--> | F-h48* |
| A#h8~ | A-h80~ | A#h8~ | A-h80~ | D-h20~ | D-h20~ | D-h10~ |
| A#h4~ | F-h64~ | A#h4~ | F-h64~ | A#h16~ | A#h16~ | A#h8~ |
| A#h1[H?] | A-h40~ | A#h1[H?] | A-h40~ | F-h12~ | F-h12~ | F-h6~ |
| 4:3--> | G-h36~ | 4:3--> | G-h36~ | D-h10~ | D-h10~ | D-h5~ |
| [H1] | F-h32~ | [H1] | F-h32~ | A#h8~ | A#h8~ | A#h4~ |
| | C#h25~ | | C#h25~ | F-h6~ | F-h6~ | F-h3~ |
| | G-h18~ | | G-h18~ | A#h4~ | A#h4~ | A#h2~ |
| | F-h8~ | | F-h8~ | A#h1[H3600000] | A#h1[H?] | A#h1~[H7200000] |
| | F-h4~ | | F-h4~ | 1:1--> | 1:2--> | [H1] |
| | F-h1[H2700000] | | F-h1[H2700000] | [H1] | [H1] | |
| | 3:4--> | | 3:4--> | | | |
| | [H1] | | [H1] | | | |
| A#13.54807024Hz | | A#13.54807024Hz | | A#13.54807024Hz | | A#27.09614048Hz |
| F-10.16105268Hz | | F-10.16105268Hz | | | | |

$$= 96_{3600000}0_1 = 128_{2700000}0_1 = 96_{3600000}0_1 = 128_{2700000}0_1 = 96_{3600000}0_1 = 96_{3600000}0_1$$

(Decimal 345,600,000)

Whole Number Analysis A

| Bar | Proportion | | Fundamental Series × Nested Series | | | | | | Conjunction Sum | | Prime Factors | | | | |
|-----|------------|---------------|--|---------|----|-----|---------|---------|-----------------|-----|---------------|-----------|------|------|-------|
| | | | (both Departing and Receiving Exchanges) | | | | | | Computed | | | | | | |
| --- | ----- | | ----- | | | | | | ----- | | ----- | | | | |
| 1. | Fundamet | lSeriesH1->H? | 3779136 | × | 60 | = | 3542940 | × | 64 | = | 226748160 | 2^8 | 3^11 | 5 | |
| | 15/16 | (16:15) | (h1) = | 3542940 | × | 64 | = | 2834352 | × | 80 | = | 226748160 | 2^8 | 3^11 | 5 |
| | 4/5 | (5:4) | (h1) = | 2834352 | × | 64 | = | 3779136 | × | 48 | = | 181398528 | 2^10 | 3^11 | |
| | 4/3 | (3:4) | (h1) = | 3779136 | × | 60 | = | 3542940 | × | 64 | = | 226748160 | 2^8 | 3^11 | 5 |
| 2. | 15/16 | (16:15) | (h1) = | 3542940 | × | 64 | = | 2834352 | × | 80 | = | 226748160 | 2^8 | 3^11 | 5 |
| | 4/5 | (5:4) | (h1) = | 2834352 | × | 64 | = | 3779136 | × | 48 | = | 181398528 | 2^10 | 3^11 | |
| | 4/3 | (3:4) | (h1) = | 3779136 | × | 48 | = | 3149280 | × | 56 | = | 181398528 | 2^10 | 3^11 | |
| 3. | 5/6 | (6:5) | (h1) = | 3149280 | × | 64 | = | 2099520 | × | 96 | = | 201553920 | 2^11 | 3^9 | 5 |
| | 2/3 | (3:2) | (h1) = | 2099520 | × | 80 | = | 1749600 | × | 96 | = | 167961600 | 2^10 | 3^8 | 5^2 |
| | 5/6 | (6:5) | (h1) = | 1749600 | × | 128 | = | 1866240 | × | 120 | = | 223948800 | 2^12 | 3^7 | 5^2 |
| 4. | 16/15 | (15:16) | (h1) = | 1866240 | × | 192 | = | 1866240 | × | 192 | = | 358318080 | 2^15 | 3^7 | 5 |
| | 1/1 | (1:1) | (h1) = | 1866240 | × | 160 | = | 2332800 | × | 128 | = | 298598400 | 2^14 | 3^6 | 5^2 |
| | 5/4 | (4:5) | (h1) = | 2332800 | × | 128 | = | 3110400 | × | 96 | = | 298598400 | 2^14 | 3^6 | 5^2 |
| | 4/3 | (3:4) | (h1) = | 3110400 | × | 64 | = | 4147200 | × | 48 | = | 199065600 | 2^15 | 3^5 | 5^2 |
| | 4/3 | (3:4) | (h1) = | 4147200 | × | 72 | = | 4665600 | × | 64 | = | 298598400 | 2^14 | 3^6 | 5^2 |
| 5. | 9/8 | (8:9) | (h1) = | 4665600 | × | 64 | = | 3732480 | × | 80 | = | 298598400 | 2^14 | 3^6 | 5^2 |
| | 4/5 | (5:4) | (h1) = | 3732480 | × | 72 | = | 4199040 | × | 64 | = | 268738560 | 2^13 | 3^8 | 5 |
| | 9/8 | (8:9) | (h1) = | 4199040 | × | 64 | = | 2799360 | × | 96 | = | 268738560 | 2^13 | 3^8 | 5 |
| | 2/3 | (3:2) | (h1) = | 2799360 | × | 64 | = | 1866240 | × | 96 | = | 179159040 | 2^14 | 3^7 | 5 |
| | 2/3 | (3:2) | (h1) = | 1866240 | × | 120 | = | 1749600 | × | 128 | = | 223948800 | 2^12 | 3^7 | 5^2 |
| 6. | 15/16 | (16:15) | (h1) = | 1749600 | × | 128 | = | 1399680 | × | 160 | = | 223948800 | 2^12 | 3^7 | 5^2 |
| | 4/5 | (5:4) | (h1) = | 1399680 | × | 256 | = | 1866240 | × | 192 | = | 358318080 | 2^15 | 3^7 | 5 |
| | 4/3 | (3:4) | (h1) = | 1866240 | × | 240 | = | 1749600 | × | 256 | = | 447897600 | 2^13 | 3^7 | 5^2 |
| 7. | 15/16 | (16:15) | (h1) = | 1749600 | × | 256 | = | 1399680 | × | 320 | = | 447897600 | 2^13 | 3^7 | 5^2 |
| | 4/5 | (5:4) | (h1) = | 1399680 | × | 512 | = | 1866240 | × | 384 | = | 716636160 | 2^16 | 3^7 | 5 |
| | 4/3 | (3:4) | (h1) = | 1866240 | × | 320 | = | 1555200 | × | 384 | = | 597196800 | 2^15 | 3^6 | 5^2 |
| 8. | 5/6 | (6:5) | (h1) = | 1555200 | × | 256 | = | 2073600 | × | 192 | = | 398131200 | 2^16 | 3^5 | 5^2 |
| | 4/3 | (3:4) | (h1) = | 2073600 | × | 320 | = | 1728000 | × | 384 | = | 663552000 | 2^16 | 3^4 | 5^3 |
| | 5/6 | (6:5) | (h1) = | 1728000 | × | 256 | = | 1843200 | × | 240 | = | 442368000 | 2^17 | 3^3 | 5^3 |
| 9. | 16/15 | (15:16) | (h1) = | 1843200 | × | 320 | = | 2304000 | × | 256 | = | 589824000 | 2^19 | 3^2 | 5^3 |
| | 5/4 | (4:5) | (h1) = | 2304000 | × | 128 | = | 3072000 | × | 96 | = | 294912000 | 2^18 | 3^2 | 5^3 |
| | 4/3 | (3:4) | (h1) = | 3072000 | × | 64 | = | 4096000 | × | 48 | = | 196608000 | 2^19 | 3 | 5^3 |
| | 4/3 | (3:4) | (h1) = | 4096000 | × | 72 | = | 4608000 | × | 64 | = | 294912000 | 2^18 | 3^2 | 5^3 |
| 10 | 9/8 | (8:9) | (h1) = | 4608000 | × | 64 | = | 3686400 | × | 80 | = | 294912000 | 2^18 | 3^2 | 5^3 |
| | 4/5 | (5:4) | (h1) = | 3686400 | × | 72 | = | 4147200 | × | 64 | = | 265420800 | 2^17 | 3^4 | 5^2 |
| 11 | 9/8 | (8:9) | (h1) = | 4147200 | × | 64 | = | 2764800 | × | 96 | = | 265420800 | 2^17 | 3^4 | 5^2 |
| 12 | 2/3 | (3:2) | (h1) = | 2764800 | × | 192 | = | 1382400 | × | 384 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| 13 | 1/2 | (2:1) | (h1) = | 1382400 | × | 384 | = | 1036800 | × | 512 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| 14 | 3/4 | (4:3) | (h1) = | 1036800 | × | 320 | = | 864000 | × | 384 | = | 331776000 | 2^15 | 3^4 | 5^3 |
| 15 | 5/6 | (6:5) | (h1) = | 864000 | × | 576 | = | 972000 | × | 512 | = | 497664000 | 2^14 | 3^5 | 5^3 |
| | 9/8 | (8:9) | (h1) = | 972000 | × | 512 | = | 1036800 | × | 480 | = | 497664000 | 2^14 | 3^5 | 5^3 |
| | 16/15 | (15:16) | (h1) = | 1036800 | × | 512 | = | 1382400 | × | 384 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| 16 | 4/3 | (3:4) | (h1) = | 1382400 | × | 384 | = | 2073600 | × | 256 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| | 3/2 | (2:3) | (h1) = | 2073600 | × | 256 | = | 1382400 | × | 384 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| | 2/3 | (3:2) | (h1) = | 1382400 | × | 384 | = | 2073600 | × | 256 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| 17 | 3/2 | (2:3) | (h1) = | 2073600 | × | 256 | = | 3317760 | × | 160 | = | 530841600 | 2^18 | 3^4 | 5^2 |
| | 8/5 | (5:8) | (h1) = | 3317760 | × | 120 | = | 3110400 | × | 128 | = | 398131200 | 2^16 | 3^5 | 5^2 |
| 18 | 15/16 | (16:15) | (h1) = | 3110400 | × | 112 | = | 2721600 | × | 128 | = | 348364800 | 2^13 | 3^5 | 5^2 7 |
| 19 | 7/8 | (8:7) | (h1) = | 2721600 | × | 128 | = | 3628800 | × | 96 | = | 348364800 | 2^13 | 3^5 | 5^2 7 |
| 20 | 4/3 | (3:4) | (h1) = | 3628800 | × | 96 | = | 4354560 | × | 80 | = | 348364800 | 2^13 | 3^5 | 5^2 7 |

| Bar | Proportion | | Fundamental Series × Nested Series | | | | | | | | Conjunction Sum | | Prime Factors | | | |
|-----|------------|-------|--|----------|---|-----|---|----------|---|-----|-----------------|-----------|---------------|------|-----|---|
| | | | (both Departing and Receiving Exchanges) | | | | | | | | | | | | | |
| --- | ----- | | ----- | | | | | | | | ----- | | ----- | | | |
| 21 | 6/5 | (5:6) | (h1) = | 4354560 | × | 48 | = | 3265920 | × | 64 | = | 209018880 | 2^13 | 3^6 | 5 | 7 |
| | 3/4 | (4:3) | (h1) = | 3265920 | × | 48 | = | 3919104 | × | 40 | = | 156764160 | 2^11 | 3^7 | 5 | 7 |
| | 6/5 | (5:6) | (h1) = | 3919104 | × | 40 | = | 4898880 | × | 32 | = | 156764160 | 2^11 | 3^7 | 5 | 7 |
| 22 | 5/4 | (4:5) | (h1) = | 4898880 | × | 48 | = | 3674160 | × | 64 | = | 235146240 | 2^10 | 3^8 | 5 | 7 |
| | 3/4 | (4:3) | (h1) = | 3674160 | × | 96 | = | 4408992 | × | 80 | = | 352719360 | 2^9 | 3^9 | 5 | 7 |
| 23 | 6/5 | (5:6) | (h1) = | 4408992 | × | 80 | = | 5511240 | × | 64 | = | 352719360 | 2^9 | 3^9 | 5 | 7 |
| | 5/4 | (4:5) | (h1) = | 5511240 | × | 80 | = | 6889050 | × | 64 | = | 440899200 | 2^7 | 3^9 | 5^2 | 7 |
| | 5/4 | (4:5) | (h1) = | 6889050 | × | 96 | = | 8266860 | × | 80 | = | 661348800 | 2^6 | 3^10 | 5^2 | 7 |
| 24 | 6/5 | (5:6) | (h1) = | 8266860 | × | 80 | = | 10333575 | × | 64 | = | 661348800 | 2^6 | 3^10 | 5^2 | 7 |
| | 5/4 | (4:5) | (h1) = | 10333575 | × | 40 | = | 7381125 | × | 56 | = | 413343000 | 2^3 | 3^10 | 5^3 | 7 |
| | 5/7 | (7:5) | (h1) = | 7381125 | × | 64 | = | 2460375 | × | 192 | = | 472392000 | 2^6 | 3^10 | 5^3 | |
| 25 | 1/3 | (3:1) | (h1) = | 2460375 | × | 128 | = | 3280500 | × | 96 | = | 314928000 | 2^7 | 3^9 | 5^3 | |
| | 4/3 | (3:4) | (h1) = | 3280500 | × | 160 | = | 2733750 | × | 192 | = | 524880000 | 2^7 | 3^8 | 5^4 | |
| | 5/6 | (6:5) | (h1) = | 2733750 | × | 128 | = | 3645000 | × | 96 | = | 349920000 | 2^8 | 3^7 | 5^4 | |
| | 4/3 | (3:4) | (h1) = | 3645000 | × | 128 | = | 2430000 | × | 192 | = | 466560000 | 2^10 | 3^6 | 5^4 | |
| 26 | 2/3 | (3:2) | (h1) = | 2430000 | × | 128 | = | 3240000 | × | 96 | = | 311040000 | 2^11 | 3^5 | 5^4 | |
| | 4/3 | (3:4) | (h1) = | 3240000 | × | 160 | = | 2700000 | × | 192 | = | 518400000 | 2^11 | 3^4 | 5^5 | |
| | 5/6 | (6:5) | (h1) = | 2700000 | × | 128 | = | 3600000 | × | 96 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| | 4/3 | (3:4) | (h1) = | 3600000 | × | 96 | = | 2700000 | × | 128 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| 27 | 3/4 | (4:3) | (h1) = | 2700000 | × | 128 | = | 3600000 | × | 96 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| | 4/3 | (3:4) | (h1) = | 3600000 | × | 96 | = | 2700000 | × | 128 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| 28 | 3/4 | (4:3) | (h1) = | 2700000 | × | 128 | = | 3600000 | × | 96 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| 29 | 4/3 | (3:4) | (h1) = | 3600000 | × | 96 | = | 3600000 | × | 96 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| 30 | 1/1 | (1:1) | (h1) = | 3600000 | × | 96 | = | 7200000 | × | 48 | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| 31 | 2/1 | (1:2) | (h1) = | 7200000 | × | 48 | | | | | = | 345600000 | 2^12 | 3^3 | 5^5 | |
| --- | ----- | | ----- | | | | | | | | ----- | | ----- | | | |

Prelude No.1, Analysis B

Lent et grave (♩ = 44)

doux et soutenu

Claude Debussy

| Conjunction | Frequencies | D-568.9Hz | G-758.5Hz | F-674.2Hz | D-561.9Hz | G-749.2Hz | F-665.9Hz |
|----------------------|--------------|---------------------------------|-----------------|-----------------|---------------------------------|-----------------|--------------|
| Conjunctions: | | D-h80*----> | G-h128*----> | G-h144* -16 | F-h96* -16 | G-h128*----> | G-h144* -16 |
| Notes: | | F-h48~ | G-h64~ | A-h80~ | D-h80*----> | D-h96* +32 | F-h128*----> |
| | | D-h40~ | D#h50~ | F-h64~ | F-h48~ | G-h64~ | A-h80~ |
| | | A#h32~ | C-h42~ | C#h50~ | D-h40~ | D#h50~ | F-h64~ |
| | | F-h24~ | B-h40~ | A-h40~ | A#h32~ | C-h42~ | C#h50~ |
| | | A#h16~ | G-h32~ | F-h16~ | F-h24~ | B-h40~ | A-h40~ |
| | | A#h8~ | A-h18~ | F-h8~ | A#h16~ | G-h32~ | F-h16~ |
| Nested Fund'l: | | A#h1[H?] | A-h9~ | F-h1[H?] | A#h8~ | A-h18~ | F-h8~ |
| Proportions: | | 6:5--> | G-h1[H?] | 3:4--> | A#h1[H?] | A-h9~ | F-h1[H?] |
| | | [H1] | 9:8--> | [H1] | 6:5--> | G-h1[H?] | 3:4--> |
| Absolute Fundamental | | [H1] | [H1] | [H1] | [H1] | 9:8--> | [H1] |
| | | | | | | [H1] | |
| Nested Fundamental | A#7.111...Hz | G-5.925...Hz | F-5.267489712Hz | A#7.023319616Hz | G-5.852766347Hz | F-5.202458975Hz | |
| Frequencies | | (Chord changed A-h1 to G-h1) | | | (Chord changed A-h1 to G-h1) | | |

The mutable numbers are too large for more than a few opening examples to be displayed.

$$\begin{aligned}
 \text{MBN: } 80_{5083731656658}0_1 &= 96_{4236443047215}0_1 \\
 &+ 32_{4236443047215}0_1 \\
 &= 128_{4236443047215}0_1 = 144_{3765727153080}0_1 \\
 &- 16_{3765727153080}0_1 \\
 &= 128_{3765727153080}0_1 = 96_{5020969537440}0_1 \\
 &- 16_{5020969537440}0_1 \\
 &= 80_{5020969537440}0_1 = \text{---->}
 \end{aligned}$$

(Decimal 406,698,532,532,640)

D-554.9Hz

G-739.9Hz

E-616.6Hz

A-1644.2Hz

D-2192.3Hz

D-1096.2Hz

G-730.8Hz

| | | | | | | |
|---------------|------------|------------|-------------|---------------|---------------|--------------|
| --> F-h96*-16 | G-h128*--> | G-h96*-16 | A-h256*---> | D-h320*-----> | D-h256* -128 | D-h96*-32 |
| D-h80*---> | D-h96*+32 | E-h80*---> | E-h96*+160 | A-h240* +80 | D-h128~-----> | G-h64~-----> |
| A-h60~ | A-h72~ | A-52~ | A#h68~ | F-h192~ | A-h96~ | D-h48~ |
| G-h56~ | G-h64~ | G-h48~ | G-h56~ | A#h128~ | F-h76~ | A#h38~ |
| D-h40~ | D-h48~ | D#h38~ | E-h48~ | F-h96~ | D-h64~ | G-h32~ |
| G-h28~ | G-h32~ | G-h24~ | G-h28~ | D-h80~ | A-h48~ | D-h24~ |
| F-h24~ | F-h28~ | F-h21~ | F-h25~ | A#h64~ | F-h38~ | A#h19~ |
| A#h16~ | B-h20~ | C-h16~ | C#h20~ | D-h40~ | D-h32~ | G-h16~ |
| A#h8~ | B-h10~ | C-h8~ | C#h10~ | D-h20~ | A-h24~ | G-h1[H?] |
| A#h1[H?] | G-h1[H?] | C-h1[H?] | Ah1[H?] | D-h10~ | F-h19~ | 3:4-> |
| 6:5-> | 3:4-> | 6:5-> | 15:16-> | A#h1[H?] | D-h16~ | [H1] |
| [H1] | [H1] | [H1] | [H1] | 4:5--> | D-h8~ | |
| | | | | [H1] | D-h1[H?] | |
| | | | | | 3:4-> | |
| | | | | | [H1] | |

A#6.936611966Hz

C-7.707346629Hz

A#6.850974781Hz

G-11.4182913Hz

G-5.780509972Hz

A-6.422788857Hz

D-8.563718477Hz

D-1096.2Hz D-1096.2Hz C-986.5Hz C-986.5Hz F-657.7Hz D-1096.2Hz G-1461.5Hz F-1299.1Hz

| | | | | | | | |
|---------------|----------|----------|----------|-----------|-------------|------------|---------------|
| D-h72*--> | D-h64*-> | D-h80*-8 | | | | G-h256*--> | G-h288*-32 |
| --> G-h48*+24 | D-h32~ | C-h72*-> | C-h64*-> | C-h96*-32 | D-160*----> | D-h192*+64 | F-h256*-----> |
| E-h40~ | A-h24~ | A#h32~ | C-h32~ | F-h64*--> | F-h96~+64 | G-h128~ | A-h160~ |
| C-h32~ | F-h19~ | F-h24~ | G-h24~ | C-h48~ | D-h80~ | D#h100~ | F-h128~ |
| G-h24~ | D-h16~ | D-h20~ | E-h20~ | A-h40~ | A#h64~ | B-h80~ | C#h100~ |
| E-h20~ | A-h12~ | A#h16~ | C-h16~ | F-h32~ | F-h48~ | G-h64~ | A-h80~ |
| C-h16~ | D-h8~ | F-h12~ | G-h12~ | A-h20~ | D-h40~ | D#h50~ | C#h50~ |
| G-h12~ | D-h1[H?] | A#h8~ | C-h8~ | C-h12~ | A#h32~ | C-h42~ | C#h25~ |
| C-h8~ | 5:4-> | A#h1[H?] | C-h1[H?] | F-h8~ | F-h24~ | B-h40~ | F-h16~ |
| C-h1[H?] | [H1] | 8:9--> | 3:2--> | F-h1[H?] | A#h16~ | G-h32~ | F-h8~ |
| 8:9-> | | [H1] | [H1] | 3:2--> | A#h8~ | C-h21~ | F-h1[H?] |
| [H1] | | | | [H1] | A#h1[H?] | B-h20~ | 3:4-> |
| | | | | | 6:5--> | A-h18~ | [H1] |
| | | | | | [H1] | A-h9~ | |

D-17.12743695Hz

C-15.41469326Hz

C-15.2243884Hz

A#13.70194956Hz

F-10.27646217Hz

A#6.850974782Hz

G-5.709145652Hz

F-5.074796135Hz

(Chord changed
A-h1 to G-h1)

D-1082.6Hz

G-1443.5Hz

F-2566.2Hz

D-2138.5Hz

G-1425.7Hz

E-2376.1Hz

| | | | | | |
|-----------------|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| ----> F-h192* | G-h256*--> | F-h512*-----> | F-h384*-64 | D-h384*-128 | E-h320*-----> |
| D-160*----> | D-h192*+64 | G-h288*+224 | D-h320*----> | G-h256*-----> | G-h192~+128 |
| F-h96~+64 | G-h128~ | A-h160~ | G-h208~ | G-h128~ | G-h96~ |
| D-h80~ | D#h100~ | F-h128~ | G-h104~ | F-h96~ | F-h84~ |
| A#h64~ | B-h80~ | C#h100~ | F-h96~ | F-h112~ | A-h52~ |
| F-h48~ | G-h64~ | A-h80~ | A-h60~ | A-h72~ | G-h48~ |
| D-h40~ | D#h50~ | F-h64~ | G-h52~ | G-h64~ | D#h38~ |
| A#h32~ | C-h42~ | C#h50~ | D-h40~ | D-h48~ | A-h26~ |
| F-h24~ | B-h40~ | F-h32~ | A-h30~ | A-h36~ | G-h24~ |
| A#h16~ | G-h32~ | C#h25~ | G-h26~ | G-h32~ | F-h21~ |
| A#h8~ | C-h21~ | F-h16~ | F-h24~ | F-h28~ | C-h16~ |
| A#h1[H?] | B-h20~ | F-h8~ | A#h16~ | B-h20~ | C-h8~ |
| 6:5--> | A-h18~ | F-h1[H?] | A#h8~ | B-h10~ | C-h1[H?] |
| [H1] | A-h9~ | 3:4--> | A#h1[H?] | G-h1[H?] | 6:5--> |
| | G-h1[H?] | [H1] | 6:5-> | 3:4-> | [H1] |
| | 9:8--> | | [H1] | [H1] | |
| | [H1] | | | | |
| A#6.766394846Hz | G-5.638662372Hz | F-5.012144331Hz | A#6.682859108Hz | G-5.569049256Hz | C-7.425399008Hz |
| | (Chord changed A-h1 to G-h1) | | | | |

From hereon the analysis follows the same path as in Analysis A, in that the subsequent proportions between chords are identical. The whole number section below lists the outcomes over the entire piece with the four G-h1 based nested series substituted for the A-h1 nested series given in Analysis A – measures 1, 2, 6 and 7.

Due to lack of line space, the analysis B table below only lists the ‘out-going’ element of each mutable number exchange.

Whole Number Analysis B

| Bar | Proportion | Fundamental Series × Nested Series (only Departing Exchanges) | Conjunction Sum Computed | Prime Factors | | |
|-----|-------------------------|--|-----------------------------|---------------|-------|-------|
| --- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1. | FundamentalSeriesH1->H? | 5083731656658 × 80 = | 406698532532640 | 2**5 | 3**26 | 5 |
| | 5/6 (6:5) (h1) = | 4236443047215 × 128 = | 542264710043520 | 2**7 | 3**25 | 5 |
| | 8/9 (9:8) (h1) = | 3765727153080 × 128 = | 482013075594240 | 2**10 | 3**23 | 5 |
| | 4/3 (3:4) (h1) = | 5020969537440 × 80 = | 401677562995200 | 2**9 | 3**22 | 5**2 |
| 2. | 5/6 (6:5) (h1) = | 4184141281200 × 128 = | 535570083993600 | 2**11 | 3**21 | 5**2 |
| | 8/9 (9:8) (h1) = | 3719236694400 × 128 = | 476062296883200 | 2**14 | 3**19 | 5**2 |
| | 4/3 (3:4) (h1) = | 4958982259200 × 80 = | 396718580736000 | 2**13 | 3**18 | 5**3 |
| 3. | 5/6 (6:5) (h1) = | 4132485216000 × 128 = | 528958107648000 | 2**15 | 3**17 | 5**3 |
| | 4/3 (3:4) (h1) = | 5509980288000 × 80 = | 440798423040000 | 2**14 | 3**16 | 5**4 |
| | 5/6 (6:5) (h1) = | 4591650240000 × 256 = | 1175462461440000 | 2**17 | 3**15 | 5**4 |
| 4. | 16/15 (15:16) (h1) = | 4897760256000 × 320 = | 1567283281920000 | 2**19 | 3**14 | 5**4 |
| | 5/4 (4:5) (h1) = | 6122200320000 × 128 = | 783641640960000 | 2**18 | 3**14 | 5**4 |
| | 4/3 (3:4) (h1) = | 8162933760000 × 64 = | 522427760640000 | 2**19 | 3**13 | 5**4 |
| | 4/3 (3:4) (h1) = | 10883911680000 × 72 = | 783641640960000 | 2**18 | 3**14 | 5**4 |
| 5. | 9/8 (8:9) (h1) = | 12244400640000 × 64 = | 783641640960000 | 2**18 | 3**14 | 5**4 |
| | 4/5 (5:4) (h1) = | 9795520512000 × 72 = | 705277476864000 | 2**17 | 3**16 | 5**3 |
| | 9/8 (8:9) (h1) = | 11019960576000 × 64 = | 705277476864000 | 2**17 | 3**16 | 5**3 |
| | 2/3 (3:2) (h1) = | 7346640384000 × 64 = | 470184984576000 | 2**18 | 3**15 | 5**3 |
| | 2/3 (3:2) (h1) = | 4897760256000 × 160 = | 783641640960000 | 2**18 | 3**14 | 5**4 |
| 6. | 5/6 (6:5) (h1) = | 4081466880000 × 256 = | 1044855521280000 | 2**20 | 3**13 | 5**4 |
| | 8/9 (9:8) (h1) = | 3627970560000 × 256 = | 928760463360000 | 2**23 | 3**11 | 5**4 |
| | 4/3 (3:4) (h1) = | 4837294080000 × 160 = | 773967052800000 | 2**22 | 3**10 | 5**5 |
| 7. | 5/6 (6:5) (h1) = | 4031078400000 × 256 = | 1031956070400000 | 2**24 | 3**9 | 5**5 |
| | 8/9 (9:8) (h1) = | 3583180800000 × 512 = | 1834588569600000 | 2**28 | 3**7 | 5**5 |
| | 4/3 (3:4) (h1) = | 4777574400000 × 320 = | 1528823808000000 | 2**27 | 3**6 | 5**6 |
| 8. | 5/6 (6:5) (h1) = | 3981312000000 × 256 = | 1019215872000000 | 2**28 | 3**5 | 5**6 |
| | 4/3 (3:4) (h1) = | 5308416000000 × 320 = | 1698693120000000 | 2**28 | 3**4 | 5**7 |
| | 5/6 (6:5) (h1) = | 4423680000000 × 256 = | 1132462080000000 | 2**29 | 3**3 | 5**7 |
| 9. | 16/15 (15:16) (h1) = | 4718592000000 × 320 = | 1509949440000000 | 2**31 | 3**2 | 5**7 |
| | 5/4 (4:5) (h1) = | 5898240000000 × 128 = | 754974720000000 | 2**30 | 3**2 | 5**7 |
| | 4/3 (3:4) (h1) = | 7864320000000 × 64 = | 503316480000000 | 2**31 | 3 | 5**7 |
| | 4/3 (3:4) (h1) = | 10485760000000 × 72 = | 754974720000000 | 2**30 | 3**2 | 5**7 |
| 10 | 9/8 (8:9) (h1) = | 11796480000000 × 64 = | 754974720000000 | 2**30 | 3**2 | 5**7 |
| | 4/5 (5:4) (h1) = | 9437184000000 × 72 = | 679477248000000 | 2**29 | 3**4 | 5**6 |
| 11 | 9/8 (8:9) (h1) = | 10616832000000 × 64 = | 679477248000000 | 2**29 | 3**4 | 5**6 |
| 12 | 2/3 (3:2) (h1) = | 7077888000000 × 192 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| 13 | 1/2 (2:1) (h1) = | 3538944000000 × 384 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| 14 | 3/4 (4:3) (h1) = | 2654208000000 × 320 = | 849346560000000 | 2**27 | 3**4 | 5**7 |
| 15 | 5/6 (6:5) (h1) = | 2211840000000 × 576 = | 1274019840000000 | 2**26 | 3**5 | 5**7 |
| | 9/8 (8:9) (h1) = | 2488320000000 × 512 = | 1274019840000000 | 2**26 | 3**5 | 5**7 |
| | 16/15 (15:16) (h1) = | 2654208000000 × 512 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| 16 | 4/3 (3:4) (h1) = | 3538944000000 × 384 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| | 3/2 (2:3) (h1) = | 5308416000000 × 256 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| | 2/3 (3:2) (h1) = | 3538944000000 × 384 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| 17 | 3/2 (2:3) (h1) = | 5308416000000 × 256 = | 1358954496000000 | 2**30 | 3**4 | 5**6 |
| | 8/5 (5:8) (h1) = | 8493465600000 × 240 = | 2038431744000000 | 2**29 | 3**5 | 5**6 |
| 18 | 15/16 (16:15) (h1) = | 7962624000000 × 224 = | 1783627776000000 | 2**26 | 3**5 | 5**6 |
| 19 | 7/8 (8:7) (h1) = | 6967296000000 × 128 = | 891813888000000 | 2**25 | 3**5 | 5**6 |
| 20 | 4/3 (3:4) (h1) = | 9289728000000 × 96 = | 891813888000000 | 2**25 | 3**5 | 5**6 |
| 21 | 6/5 (5:6) (h1) = | 11147673600000 × 48 = | 535088332800000 | 2**25 | 3**6 | 5**5 |
| | 3/4 (4:3) (h1) = | 8360755200000 × 48 = | 401316249600000 | 2**23 | 3**7 | 5**5 |

[illegible]