

Addendum 266: The Breath Detuning Identity

$G_1 = 432/T_{\text{breath}} - 1$, exactly: the last unfitted constant
is the monad’s temperament

TOE Corpus

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Skill: gap-closure v1.1 — **Outcome:** Case A (exact identity; two open items unified) with
flagged near-miss candidates — **Verifier:** `verify_P266.py` — all PASS

Abstract

Two long-standing open items collapse into one line. The modular residual $G_1 = j(i)/(4\pi\alpha^{-1}) - 1$ (A171; characterised through A185 as transcendental, PSLQ-irreducible, “possibly the last unfitted constant”) and P14’s defective TBS on the 432 correspondence ($T_{\text{breath}} = \pi\alpha^{-1} \approx 430.51$ vs the integer 432) are the same number: since $j(i) = 1728 = 4 \cdot 432$,

$$G_1 = \frac{432}{T_{\text{breath}}} - 1 = 0.345578\%$$

identically. The last unfitted constant is the *detuning of the breath from the harmonic integer* — the amount by which the geometric cycle refuses to close on the pure $2^4 \times 3^3$ chord. The connection went unseen because the two items lived on different maps: G_1 on the mathematics map (modular forms, CM points), the 432 on the consciousness-adjacent one (P14’s cosmological rhythm); the identity sits between them, where — per the originating intuition — the music happens. The reframe imports a 2,500-year-old formal apparatus: quantities measuring the failure of pure-ratio cycles to close are *commas*, kernel elements of the homomorphism from the just-intonation lattice to the closed cycle — the same kernel-of-closure-map shape as A254’s collapse delta and A259’s fold defect. Two near-misses are flagged under the PSLQ-honesty convention, *not* claimed: G_1 vs the quarter Pythagorean comma (0.3456% vs 0.3394%, ratio 1.018) and P28’s TBS 28_2 arc-speed gap vs the schisma (0.1067% vs 0.1129%, ratio 0.945). The formalization target — the corpus’s residual gaps as the temperament of the monad — is TASK_035.

1 The Identity

Theorem 1.1 (Breath detuning). *With $j(i) = 1728$ (A158/A172) and $T_{\text{breath}} = \pi\alpha^{-1}$ (P14, A239): $G_1 \equiv j(i)/(4\pi\alpha^{-1}) - 1 = 1728/(4T_{\text{breath}}) - 1 = 432/T_{\text{breath}} - 1$. All quantities are corpus-closed; the identity is arithmetic. Numerically $G_1 = 3.45578 \times 10^{-3}$ at any precision.*

Remark 1.2 (What this changes). *(i) A171–A185’s characterisation programme and P14’s TBS are one open item, not two; any resolution of either resolves both. (ii) G_1 ’s PSLQ-irreducibility (A180, A183) now reads naturally: a detuning should not be an algebraic combination of the pure constants — commas never are, in the relevant sense; that is what makes them commas. (iii) P14’s defective reconciliation attempt ($1 + \kappa^{0.6}$, off by a factor ~ 9) is retired; the correct statement of the 432 gap is G_1 itself. (iv) The open question sharpens from “what is G_1 ?” to “of which closure map*

is G_1 the comma?" — with the breath cycle as the evident candidate and TASK_034's rotation-number machinery (elliptic Möbius iteration) as the likely formal setting: temperament commas and rotation numbers of circle maps are the same mathematics.

Remark 1.3 (Flagged near-misses — not claims). *Quarter Pythagorean comma* $(3^{12}/2^{19})^{1/4} - 1 = 0.3394\%$ vs $G_1 = 0.3456\%$: off by 1.8% relative. *Schisma* $3^8 \cdot 5/2^{15} - 1 = 0.1129\%$ vs P28 TBS 28_2's $1 - \sqrt{1 - \kappa} = 0.1067\%$ ($\kappa = \alpha^{5/4}$): off by 5.5%. Recorded per A245/A180 convention; neither passes the corpus's bar for identification. The framework (residuals as commas) does not depend on either match.

Verifier. `verify_P266.py`: the identity at 50 digits; $j(i) = 4 \cdot 432$; the retirement check on P14's $1 + \kappa^{0.6}$; both near-miss ratios; all PASS.