

Tetration FAQ: Outline

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This may be a little verbose for an outline, but that means it will be easier to fill it in, as we do not have to write as much for each section.

- Introduction
 - Analytic continuation
 - * Extension of factorials
 - * Extension of super-factorials
 - * Extension of exponentiation
 - Applications
 - * Applications to combinatorics
 - * Applications to complexity theory
 - * Applications to computer arithmetic
 - * Applications to number theory
- Hyper-operations
 - Standard notations
 - * Box notations
 - * Arrow notation
 - * Conway's chain notation
 - * Bowers' array notation
 - * Steinhaus-Moser notation
 - Standard identities
 - Standard definitions
 - * Hyper-exponentials
 - * Hyper-logarithms

- Other hyper-operations
 - * Munafo's lower hyper-operations
 - * Bromer's mixed hyper-operations
 - * Frappier's balanced hyper-operations
 - * Robbins' exponential hyper-operations
 - * Trappmann's commutative hyper-operations
 - * Trappmann's binary tree arithmetic
- Iteration theory
 - Dynamical systems
 - * Fixed points
 - * Lyapunov number
 - Functional equations
 - * Abel function
 - * Schröder function
 - * Böttcher function
 - * Julia function
 - Embedding matrices
 - * Carleman matrix
 - * Bell matrix
 - * Abel-Robbins matrix
 - Natural iteration
 - Regular iteration
 - * Hyperbolic iteration
 - * Parabolic iteration
- Tetration
 - History of tetration
 - Variants of tetration
 - * Iterated exponentials (auxiliary tetration)
 - * Nested exponentials (towers)
 - * Exponential forests

- Standard definitions
 - * Super-exponentials (tetrationals)
 - Base 0
 - Base 1
 - Base $\sqrt{2}$
 - Base $e^{1/e}$
 - Base 2
 - Base e
 - Base 10
 - Base ∞
 - Complex bases
 - * Super-logarithms
 - Base 1
 - Base $\sqrt{2}$
 - Base $e^{1/e}$
 - Base 2
 - Base e
 - Base 10
 - Base ∞
 - Complex bases
 - * Super-powers (tetrates)
 - Negative heights
 - Infinite heights
 - Real heights
 - Complex heights
 - Series expansions
 - * Super-roots
 - Infinite heights
 - Real heights
 - Complex heights
 - Series expansions
 - * Iterated exponentials
 - * Auxiliary super-roots

- Standard extensions
 - * Natural tetration (Walker-Robbins-Fox)
 - Peter Walker’s method (matrix)
 - Andrew Robbins’ method (matrix)
 - Jay D. Fox’s method (accelerated)
 - * Regular tetration (Szekeres-Geisler)
 - Hyperbolic tetration
 - Parabolic tetration
- Other extensions
 - * Ingolf Dahl’s extension (fractional)
 - * Jay D. Fox’s extension (linear)
 - * Ioannis Galidakis’ extension (bump)
 - * Gottfried Helms’ extension (embedded)
 - * Robert Munafo’s extension (tower)
 - * Clifford Nelson’s extension (recursive)
 - * Andrew Robbins’s extension (quadratic)
 - * Peter Walker’s extension (iterative)
 - * S. C. Woon’s extension (binomial)
- Special Functions
 - Named functions
 - * Euler gamma function (factorials)
 - * Barnes G function (super-factorials)
 - * Fox μ function (change of base formula)
 - * Galidakis HW function (hyper-product-logarithm)
 - * Knoebel h function (infinitely iterated exponential)
 - * Lambert W function (product-logarithm)
 - Special cases of exponentials
 - * Exponentials (b^x)
 - * Decremental exponentials ($h^x - 1$)
 - * Product exponentials (xe^x)
 - * Scaled exponentials (λe^x)

- Topological Conjugacy
 - * Lambert-like conjugates $(x^x, x^{1/x}, x\mathbf{e}^x)$
 - * Exponential-like conjugates $(b^x, \lambda\mathbf{e}^x, h^x - 1)$
- Miscellaneous functions
 - * Exponential commutator $(x^y = y^x)$
 - * Exponential factorial