



Math for the people, by the people.

Veblen function

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Defines	strongly critical
Defines	Feferman-Schutte ordinal

The *Veblen function* is used to obtain larger ordinal numbers than those provided by exponentiation. It builds on a hierarchy of closed and unbounded classes:

- $Cr(0)$ is the additively indecomposable numbers, \mathbb{H}
- $Cr(Sn) = Cr(n)'$ the set of fixed points of the enumerating function of $Cr(n)$
- $Cr(\lambda) = \bigcap_{\alpha < \lambda} Cr(\alpha)$

The Veblen function $\varphi_\alpha\beta$ is defined by setting φ_α equal to the enumerating function of $Cr(\alpha)$.

We call a number α *strongly critical* if $\alpha \in Cr(\alpha)$. The class of strongly critical ordinals is written **SC**, and the enumerating function is written $f_{\mathbf{SC}}(\alpha) = \Gamma_\alpha$.

Γ_0 , the first strongly critical ordinal, is also called the *Feferman-Schutte* ordinal.