

Complexity of Symmetric Avatar Paths

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When a symmetric avatar path of f is g where $?$ is a shorthand for $[truth \Rightarrow answered]$:

$$?f \Leftrightarrow g$$

The g function is part of a simpler family of function than f .

$f :$	g
$bool \rightarrow bool$	$ \{false, id\} = 2$
$bool^2 \rightarrow bool$	$ \{false, fst, snd, and\} = 4$
$bool^3 \rightarrow bool$	$ \{false, arg0, arg1, arg2, and01, and12, and02, and012\} $
\dots	
$bool^n \rightarrow bool$	$ \{ \dots \} = 2^n$

Symmetric avatar paths grow with the complexity of a powerset.

On the other hand, the full family of functions grows much faster in complexity:

$$|bool^n \rightarrow bool| = |bool|^{|bool^n|} = 2^{(2^n)}$$