

# Maximum Mathematical Languages

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*In this paper I use Avatar Schema Theory to derive a grammar for maximum mathematical languages.*

In the paper “Avatar Schema Theory”<sup>[1]</sup>, I introduced axioms in Propositional Logic<sup>[2]</sup> for integrating Inside vs Outside Theories<sup>[3]</sup> for Avatar Extensions<sup>[4]</sup> with Kent Palmer’s (Ph.D) Schema Theory<sup>[5]</sup>.

A maximum mathematical language is a mathematical language that attempts to cover as much mathematics as possible, or in the very least try to cover all 6 Aspects of Being in the following way:

1. Has 2 provable properties (of 6 in total) that satisfies the grammar of maximum mathematics
2. Must prove as many cases as possible,  
where it is provable that it can not prove the other 4 properties about itself

The second criteria is weakened to proving as many cases as possible, instead of proving all cases, because it is currently unknown whether it is possible to prove all 4 cases.

The grammar of maximum mathematical languages is given as following:

```
verification|validation coherence  
consistency|completeness coherence|clarity
```

This can be derived using following steps:

1. Enumerate all 6 properties (e.g. standard enumeration of binary numbers)
2. For each enumeration `x`, check whether `x => false` is provable
3. Collect all enumerations where `x => false` is not provable
4. This should give 13 satisfied models, that represents kinds of theories of maximum 2 properties
5. Remove the empty theory (0 properties satisfied)
6. Observe that for all 6 properties, there is a corresponding satisfied model
7. Remove the the satisfied models for each of the 6 properties,  
because they are subsets of other theories with 2 properties
8. Use the resulting 6 satisfied models to create the grammar

A sentence in the grammar is an ordered Cartesian product,  
which is isomorphic to sets, which again are isomorphic to propositions.

Therefore, when a mathematical language satisfies the grammar, it has maximum 2 provable properties.

## References:

- [1] “Avatar Schema Theory”  
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Wikipedia  
[https://en.wikipedia.org/wiki/Propositional\\_calculus](https://en.wikipedia.org/wiki/Propositional_calculus)
- [3] “Plato’s Cave Found in Mathematics”  
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- [4] “Avatar Extensions”  
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