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The rules of the game

We began by fixing some rules.

The first rule is that we would take turns writing numbers on the board, and that the last person to write down a valid entry would be the winner.

The second rule is that only finite numbers would be allowed. The number 17, for example, would count as a valid entry as would the number 1,010,101,010, but not ω or $\omega + \omega$.

The third rule is that semantic vocabulary — expressions like “names” or “refers to” or “is true of” — would be disallowed. This restriction is crucial. Without it, Adam would have been in a position to write “the biggest number ever named by Agustín, plus one” on the board, and win on the first round. (Worse still: I would have been able to also write “the biggest number ever named by Adam, plus one”, leaving us with a problem.)

Finally, we agreed not to engage in unsporting behavior.

Each time one of us wrote a number on the board, the other would either recognize defeat or respond with a much bigger number.

How much bigger?

Big enough that it would be impossible to reach it in practice (e.g. before someone got hungry and left) using only methods that had been introduced in previous stages of the competition.



That means, for example, that if, a little ways into the competition, Adam’s last entry was “101010”, it would be unsporting for me to respond with “101010+ 1”, or with “10101010”. For either of these numbers can be reached, in a relatively short time, using methods that had already been introduced. We wanted the competition to be a war of originality, not a war of patience!

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