



Math for the people, by the people.

## Burali-Forti paradox

Canonical name	BuraliFortiParadox
Date of creation	2013-03-22 13:04:28
Last modified on	2013-03-22 13:04:28
Owner	Henry (455)
Last modified by	Henry (455)
Numerical id	8
Author	Henry (455)
Entry type	Definition
Classification	msc 03-00

The *Burali-Forti* paradox demonstrates that the class of all ordinals is not a set. If there were a set of all ordinals,  $Ord$ , then it would follow that  $Ord$  was itself an ordinal, and therefore that  $Ord \in Ord$ . If sets in general are allowed to contain themselves, ordinals cannot since they are defined so that  $\in$  is well founded over them.

This paradox is similar to both Russell's paradox and Cantor's paradox, although it predates both. All of these paradoxes prove that a certain object is "too large" to be a set.