
From: Misha Gromov [REDACTED]
Sent: Monday, December 4, 2017 1:24 PM
To: jeffrey E.
Subject: Re:

Can't say i got it, why "understanding"

On Mon, 4 Dec 2017 07:59:01 -0500, jeffrey E. wrote:

why is `transfinit= recursion <https://en.wikipedia.org/wiki/Transfinite_recursion>` a good model for understanding – the proo= that the result is well-defined uses transfinite induction. Let `FF` to be defined on the ordinals. The i=ea now is that, in defining `F(α)` for an unspecified ordinal=α, one may assume that `F(β)` is already defined for all=β < α and thus give a fo=mula for `F(α)` in terms of these `F(β)`. It then=follows by transfinite induction that there is one and only one function s=tisfying the recursion formula up to and including α.

(more will be given later): define function `F` by letting `F<=em>(α)` be the smallest ordinal not in the set `{F(β) | β < α}`, that is, the set =onsisting of all `F(β)` for β < α. This definition assumes the `F(β)` known=in the very process of defining `F`; this apparent vicious circle i= exactly what definition by transfinite recursion permits. In fact, `F<=em>(0)` makes sense since there is no ordinal =beta; < 0, and the set `{F(beta;) | β < 0}` is empty. So `F(0)` is equal to 0 (t=e smallest ordinal of all). Now that `F(0)` is known, the definitio= applied to `F(1)` makes sense (it is the smallest ordinal not in t=e singleton set `{F(0)} = {0}`)

it sort of says an approximation to truth. by reduction. alt=rnately we can add other dimensions.

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please note

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JEE

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