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 $F(\alpha)$ for an unspecified ordinal=α, one may assume that $F(\beta)$ is already defined for all=β < α and thus give a fo=mula for $F(\alpha)$ in terms of these $F(\beta)$. 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 $\{F(\beta) \mid \beta < \alpha\}$, that is, the set =onsisting of all $F(\beta)$ for &beta= < α. This definition assumes the $F(\beta)$ 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 $\{F(=beta;) \mid \beta < 0\}$ 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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