

Re: Separation, Power and Countability.

Source: <http://sci.tech-archive.net/Archive/sci.math/2007-06/msg03801.html>

- *From:* zuhair <zaljo...@xxxxxxxx>
 - *Date:* Wed, 20 Jun 2007 09:24:10 -0700
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On Jun 20, 12:54 am, MoeBlee <jazzm...@xxxxxxxx> wrote:

On Jun 19, 10:25 pm, zuhair <zaljo...@xxxxxxxx> wrote:

On Jun 20, 12:15 am, MoeBlee <jazzm...@xxxxxxxx> wrote:

On Jun 19, 9:36 pm, zuhair <zaljo...@xxxxxxxx> wrote:

On Jun 19, 11:05 pm, Keith Ramsay
<kram...@xxxxxxx> wrote:

On Jun 19, 7:26 am, zuhair
<zaljo...@xxxxxxxx>
wrote:
|I asked for the proof of the
following:
|For any set d that is a
member of Pw and is
indefinable what is the
|prove of d being
equinumerous to w ?

Meaning, I suppose, how
can one prove that each
undefinable subset A of w is
equinumerous with w .

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If A is finite, then A is definable as $\{n : n \text{ is a natural number and } (n=a_0 \text{ or } n=a_1 \text{ or } \dots \text{ or } n=a_m)\}$ for some a_0, \dots, a_m .

If A is undefinable, then, A is infinite and each infinite subset of w is equinumerous with w . Let a_0 be the least element of A , and inductively let a_{k+1} be the least element of A not among a_1, \dots, a_k . Then a_i gives a 1-1 correspondence between A and w .

Keith Ramsay

This depends on choice.

No, it doesn't; think about it for a moment.

it doesn't for this particular example since w is well ordered, I know. But I was talking about the bigger picture.

No, you weren't. You asked about w . Now you have a DIFFERENT questions.

for example take PP_w , and let d be a member of PP_w that is not a member of P_w and let d be undefinable and uncountable.

Now what is the proof that $\exists f: P_w \rightarrow d$

what is that: the question is what is the proof that

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$Ef(f:Pw \rightarrow d, f \text{ is injective})$.

Let $y \in d$. Then let f map Pw into d by $f(x) = y$.

Oh, that's not what you had in mind, is it? Well, it answers what you wrote, sorry.

Anyway, without the continuum hypothesis, I don't know why all such d are equinumerous with Pw . Maybe they are, but I don't know why one would think that they are.

well my question is of course without the continuum hypothesis. But let's assume the continuum hypothesis
SHOW me an injective function from Pw to d , Remember d is an uncountable and undefinable subset of Pw .

Zuhair

of course I am speaking in a set theory without choice.

MoeBlee– Hide quoted text –

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