

Re: Order modulo p^n (Number Theory)

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 - *Date:* Sun, 14 Sep 2008 08:01:55 -0700 (PDT)
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On Sep 15, 12:37 am, Tonico <Tonic...@xxxxxxxxxx> wrote:

On Sep 14, 3:56 pm, "dark.sorrow.myst...@xxxxxxxxxx"

<dark.sorrow.myst...@xxxxxxxxxx> wrote:

Hello need some help with a question in number theory im attempting

Let p be an odd prime and $n > 1$ an integer. Find the order of $(1 + p)$ modulo (p^n) .

Cheers

Hints:

1.- Try with $p = 3$, $1 + p = 4$ and $n = 1, 2, 3, 4$, and then with $p = 5$ and $1 + p = 6$, and then even with $p = 7$ and $1 + p = 8...$

2.- Now prove your guess or hunch: use Newton's binomial with

$(1 + p)^{p^{(n-1)}}$...you may want to show that the binomial

coefficient $[p^r : r]$ is divisible by p iff r is a multiple of $p...$

Regards

Tonio

Cheers, thanks you for your help, I should of used the examples to find the order. Then try prove it. was trying to come up with the order via theorems and was getting know where. Thanks Tonio on the binomial, that really helped with the proof of the order.

Re: Order modulo p^n (Number Theory)

cheers sorrow

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