

Re: Collatz Problem: An idea for its solution.

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-05/msg02903.html>

- *From:* Ernst <ernst_berg@xxxxxxxxxxxxxx>
 - *Date:* Sun, 15 May 2005 05:58:11 GMT
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On Thu, 12 May 2005 18:25:38 -0400, A. Boom wrote:

- > Hi,
- >
- > I read about the Collatz Problem and then wrote some programs to study
- > the patterns. Please let me know if the following is sound idea for
- > solving the problem.
- >
- > Although I do not have a solution, I would like to know if the idea I
- > have is sound. It is a simple idea, really.
- >
- > The idea is that the Collatz Problem can be viewed as a person either
- > stepping toward or away from a point we label 1.
- >
- > 1) If the current value, P, is an even number then the person walks
- > toward the point and the distance from the person and the point decreases.
- >
- > 2) If the current value, P, is an odd number then the person will walk
- > away from the point and the distance from the person and the point
- > increases.
- >
- > The difficult part is 2, but I have an idea of how to deal with it.
- >
- > When P is odd, the next P, P1, will equal $3*P + 1$. Thus the increase in
- > distance, D, is equal to $(3*P + 1) - P = 2*P + 1$. It is also seen that
- > P1 will be an even number, hence the next time will involve division by
- > 2 which is thought of as stepping toward the point 1.
- >
- > If it can be shown that AFTER the distance was increased, at the odd
- > step, the subsequent decreases in distance is greater, then the sequence
- > of P's will have been shown to ultimately decrease. It would then need
- > to also show that the end point is 1. And since a decrease in distance
- > is always a division by 2, and the numbers are always positive integers,
- > the last P will be equal 1.
- >
- > The above is the general idea. A more concise way of the idea is that it
- > need only be shown that when P is odd, the next P, P1, will have more
- > factors of 2 than the increase in distance, $2P + 1$ has. Thus the next
- > odd number encountered will be less than any previous odd number

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- > encountered in the sequence. The sequence will thus have been shown to
- > ultimately decrease.
- >
- > Again, this is only an idea that I had. One has to risk failure to learn
- > new things.
- >
- > Thanks, Adam.

There are many views on this.

I have thought to ignore value and focus on parity language.

Both Mensanator and I have started groups.

Mesanator has started one that is in the mode you are in and I have started one that is more on the what if side and I hope to see all $[A(x) \pm y, x/z]$

http://groups-beta.google.com/group/Dymanic_Systems

and

<http://groups-beta.google.com/group/TrueButUnproven>

Plus there are othe folks with a lot of experience who have said they will read and reply as needed.

Feel free all of you to join in the groups.

Sci.math is still king imo but these groups are a slower paced place.

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• **References:**

- ◆ ***Collatz Problem: An idea for its solution.***

◇ From: A. Boom

- Prev by Date: ***Re: existence/uniqueness of the solution to a equation***
- Next by Date: ***Re: Problems I have with $1.999...=2$***
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