Universe's Way Of Recursively Finding The Next Term Of Any Sequence {File Closing Version 3}. ISSN 1751-3030

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Abstract

In this research investigation, the author has detailed a novel method of Universe's Way Of Recursively Finding The Next Term Of Any Sequence.

Theory

Given any Sequence of the kind,

$$S = \{y_1, y_2, y_3, \ldots\ldots, y_{n-1}, y_n\}$$

We first consider the Cartesian Cross Product of S with itself, i.e.,

$$R = S \times S = \underset{j=1}{\overset{n}{C}}\underset{i=1}{\overset{n}{C}}\{y_i, y_j\}$$ where C denotes a collection.

We then remove all the pairs of the kind $\underset{i=1}{\overset{n}{C}}\{y_i, y_i\}$ from R.

We now also consider elements of the kind $\{y_i, y_j\}$ and $\{y_j, y_i\}$ as same and therefore consider only one among them in R.

That is we now have

$$LB = \underset{j=1}{\overset{n}{C}}\underset{i=1}{\overset{n}{C}}\{y_i, y_j\} - \underset{i=1}{\overset{n}{C}}\{y_i, y_i\} - \underset{j:j>i}{\overset{n}{C}}\ \underset{i=1}{\overset{n}{C}}\{y_j, y_i\}$$

We now consider the smaller of each 2 tuple and add these smaller values to give us the next term of the sequence.

Example:

S={2,4,6}

SXS={2,4,6}X{2,4,6}={{2,2}, {2,4}, {2,6}, {4,2}, {4,4}, {4,6}, {6,2}, {6,4}, {6,6}}

Now , $\underset{i=1}{\overset{n}{C}}\{y_i, y_i\}$ are {{2,2},{4,4}, {6,6}}

And $\underset{j:j>i}{\overset{n}{C}}\ \underset{i=1}{\overset{n}{C}}\{y_j, y_i\}$ are {4,2}, {6,2}, {6,4}

Therefore, removing these from SXS, we get

LB={{2,4}, {2,6}, {4,6}}.

We now consider the smaller of each 2-tuple, i.e., SLB={2,2,4}.

Now, we add these above terms

NTS={2+2+4}=8.

Now, this 8 can be considered as the Next Term of the Sequence ordered by the Universe.

The spirit behind considering the smaller number is that it represents the congruence part of the two numbers. The logic behind removing the $\underset{i=1}{\overset{n}{C}}\{y_i, y_i\}$ terms is that nature does not consider evaluating congruence with itself. The logic behind removing the $\underset{j:j>i}{\overset{n}{C}}\ \underset{i=1}{\overset{n}{C}}\{y_j, y_i\}$ terms, is that when their congruence part is evaluated it is the same as their places juxtaposed counterparts of themselves in of SXS.

Example:

Similarly as detailed above, if we consider S={2,3,5}, we get 7 as the next term of this sequence.

Hence, this method can also be used to find the Sequence of Primes as well given the first three Primes.

References

1.Bagadi, R. (2016). Proof Of As To Why The Euclidean Inner Product Is A Good Measure Of Similarity Of Two Vectors. *PHILICA.COM Article number 626*. Please see the addendum as well.
http://philica.com/display_article.php?article_id=626
2.http://www.philica.com/advancedsearch.php?author=12897
3.http://www.vixra.org/author/ramesh_chandra_bagadi