

Re: Steven Cullinane is a Crank

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-07/msg02538.html>

- *From:* "Bob Stewart" <bobstewart_III@xxxxxxxxxxx>
 - *Date:* 17 Jul 2005 09:01:34 -0700
-

Ah, I just found an interesting old post on one of Steven Cullinane's gazillion websites that proves that the statement of his "Diamond Theorem" is totally and outrageously false! I am quoting the post verbatim:

What follows is attributed to:
Jed Pack
packj@xxxxxxxxxxx
18:35:25 04/17/02 Wed

Steven Cullinane,

I wonder how you got the number 322,560.

I suggest the number is at most $30^2=900$.
Please let me know if you find the error in my logic.

In the original four diamond configuration. The matrix indicating which squares have the black corner either at top-right or top-left is:

```
0 0 0 0
1 1 1 1
0 0 0 0
1 1 1 1
```

Similarly, the matrix indicating which squares have the black corner either at top-right or bottom-right is:

```
1 0 1 0
1 0 1 0
1 0 1 0
1 0 1 0
```

These two matrices fully describe the configuration. Swapping columns, rows, and quadrants can change these matrices into any of the following other 30 matrices (there are no other possibilities):

```
0 0 1 1 | 0 1 1 0 | 0 0 1 1 | 1 1 1 1 | 1 0 1 0 |
0 0 1 1 | 0 1 1 0 | 1 1 0 0 | 0 0 0 0 | 1 0 1 0 |
```

Re: Steven Cullinane is a Crank

0011|1001|1100|0000|0101|
0011|1001|0011|1111|0101|

0101|0000|0101|1001|1100|
0101|1111|1010|0110|1100|
0101|0000|1010|1001|0011|
0101|1111|0101|0110|0011|

0110|0011|0110|1010|1111|
0110|1100|1001|0101|1111|
0110|0011|1001|1010|0000|
0110|1100|0110|0101|0000|

0000|0101|1001|1100|1001|
0000|1010|0110|0011|1001|
1111|0101|0110|1100|1001|
1111|1010|1001|0011|1001|

0011|0110|1010|1111|1010|
0011|1001|0101|0000|1010|
1100|0110|0101|1111|1010|
1100|1001|1010|0000|1010|

0101|0000|1100|1001|1100|
0101|1111|0011|1001|1100|
1010|1111|0011|0110|1100|
1010|0000|1100|0110|1100|

Consequently, any pattern that can be obtained through such transformations can be described by a pair of these two matrices.

There are 30^2 such pairs, and hence can be no more than 30^2 patterns obtained through the mentioned transformations.

.

• *Follow-Ups:*

- ◆ *Re: Steven Cullinane is a Crank*
◇ From: Steven H. Cullinane

• *References:*

- ◆ *Re: Steven Cullinane is a Crank*
◇ From: Bob Stewart
- ◆ *Re: Steven Cullinane is a Crank*
◇ From: Steven H. Cullinane
- ◆ *Re: Steven Cullinane is a Crank*
◇ From: Bob Stewart
- ◆ *Re: Steven Cullinane is a Crank*
◇ From: Jesse F. Hughes

Re: Steven Cullinane is a Crank

- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Bob Stewart
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Jesse F. Hughes
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Bob Stewart
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Jesse F. Hughes
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Bob Stewart
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: Jesse F. Hughes
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: john_ramsden
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: crankbuster
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: john_ramsden
- ◆ **Re: Steven Cullinane is a Crank**
◇ From: crankbuster

- Prev by Date: **Re: stumped on integral**
- Next by Date: **Re: Relative Cardinality**
- Previous by thread: **Re: Steven Cullinane is a Crank**
- Next by thread: **Re: Steven Cullinane is a Crank**
- Index(es):
 - ◆ **Date**
 - ◆ **Thread**