

Break It Up!

This puzzle is a simple question on how many possibilities there are. Here is my solution:

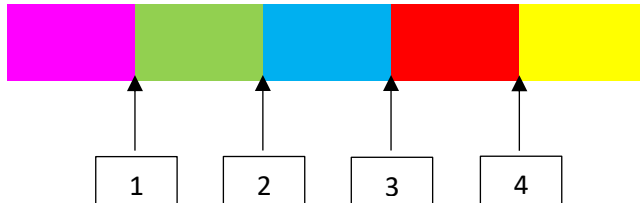
5 Brick Long Tower

Here we have a stack of 5 bricks and we need to find out how many times we can split it with two pieces but we can't change the order.

5 Bricks Long Tower

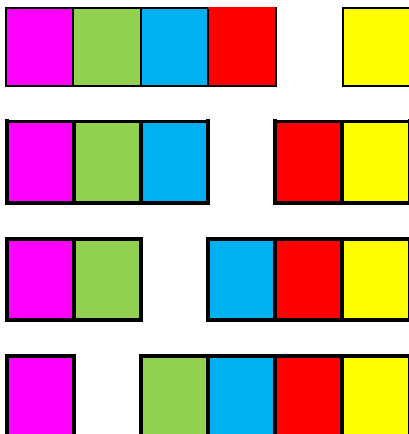


First, we need to find out how many joins there are between the bricks.



There are four joins between the bricks so we can make a space between each join to separate the bricks. There are four joins so four spaces and four ways to separate them. Here they are:

Possible Combinations For Tower:



7 Brick Long Tower

Now, let's try it with seven bricks. There are 6 possible combinations.

Conclusion

So, the formula is ***Number Of Bricks – 1 = Number Of Possible Combinations.***

So, in a 3925 block tall tower, there will be 3924 possible combinations! The answer will always be one less than the number of bricks because the joins are one less. Using this logic, we can now predict the number of possible combinations of any number of bricks. Just subtract one!

Possible Combinations For Different Brick Totals

Number Of Bricks	Number Of Combinations
7	6
8	7
6	5
20	19
5	4
3925	3924