

Math and Folding PUZZLE SOLUTIONS

Here are the answers to the puzzles from last time.

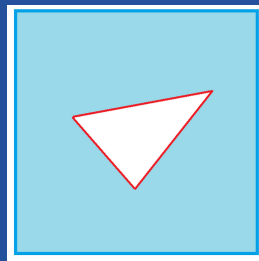
puzzle #1

Folding a strip of paper in half one time gives 2 layers of paper.
Folding a strip of paper in half two times gives 4 layers of paper.
Folding it in half three times gives 8 layers of paper.

How many layers of paper would you have if you folded the piece of paper in half a total of ten times?

puzzle #2

Fold a square piece of paper, cut off a corner with a single straight cut, and produce a triangular hole.



Can you do it?

To the Moon!

If you fold a piece of paper in half 48 times, you will have over 280,000,000,000,000 layers!

The distance to the Moon is about 384,000,000 meters and the thickness of piece of paper is about 0.00005 meters. (I looked this up on the internet. I hope it is true!)

So, that many layers, at that thickness, makes for a wad of paper 14,000,000,000 meters thick. That's actually well beyond the distance to the moon!

ANSWER TO PUZZLE 1:

There will be 1024 layers!

ANSWER TO PUZZLE 2:

This is surprisingly tricky!

Here's a [lovely video](#) that shows how to cut such a hole.

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The NMF Weekly is written by mathematician Dr. James Tanton as a resource for friends and fans of the 2021 National Math Festival.

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