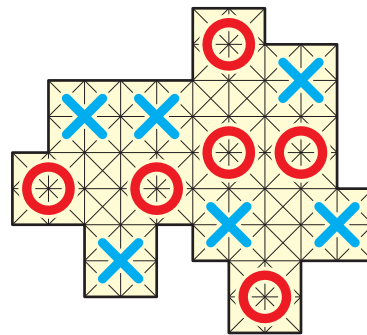


## BRAIN SHARPENER

From  
Serhiy and Peter Grabarchuk (grabarchukpuzzles.com)

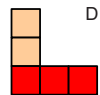
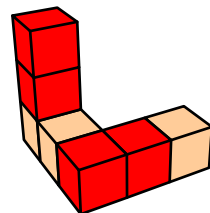
1 ★★★★★

Divide the figure shown on the right into *six identical* parts. They must be the same in shape and area, and each of them must contain exactly one X and one O placed in the same position on every part. As a result parts must coincide when superimposed (without flipping them over), including both their outlines and positions of X's and O's.



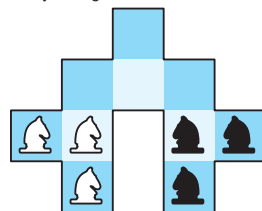
2 ★★☆☆☆

The 3D shape consists of seven color cubes, three light and four dark ones. Determine which of the five shown 2D views of the shape (A-E) are correct and which are not?



3 ★★★★★

Performing just normal knight's moves, swap the black and white Knights in the fewest moves. A move is counted as a series of uninterrupted jumps performed by a Knight.

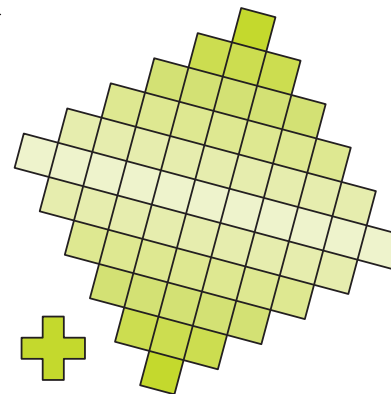


## BRAIN SHARPENER

From  
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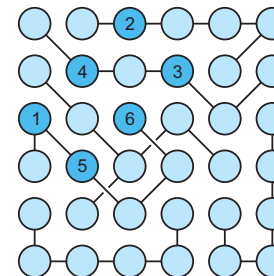
1 ★★★★★

How many X-shapes of all possible sizes can be found within this shape? All X-shapes must be exactly similar to the small one shown next to the shape. Such X-shapes are called Greek Crosses, and each of them consists of five equal squares.



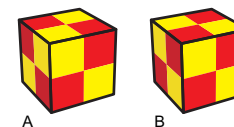
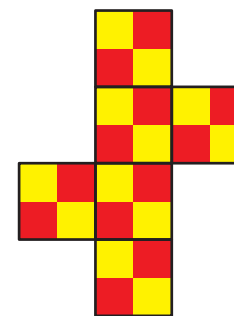
2 ★★★★★

by Helen Grabarchuk



3 ★★☆☆☆

Which cube it is possible to fold from the given pattern?

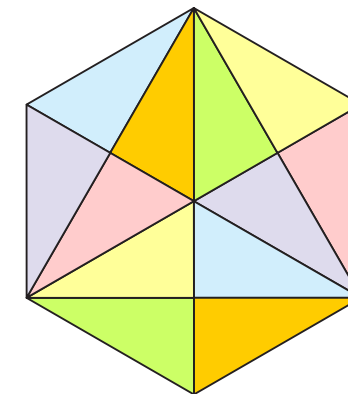


## BRAIN SHARPENER

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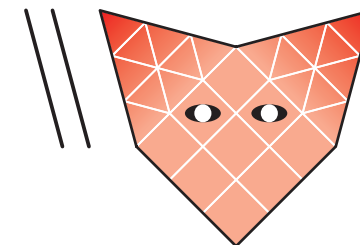
1 ★★★★★

How many outlines of triangles of all sizes can you trace in the figure?



2 ★★★★★

Divide the Fox shape with two segments into two parts of the same area. Each segment is as long as each side of the shape. Note that you should not overlap the segments.



3 ★★☆☆☆

The Totem Pole shape consists of orange and red blocks. What is bigger: the total volume of the orange blocks or the total volume of the red blocks?

