Math Kangaroo Webinar
Level 5-6

Hands On

Folding, Cutting, and Arranging Shapes

Warm Up

Instruction

You can fold paper during MK test!

Folding, Cutting, and Arranging Shapes

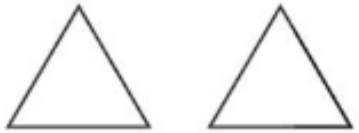
Wrap Up

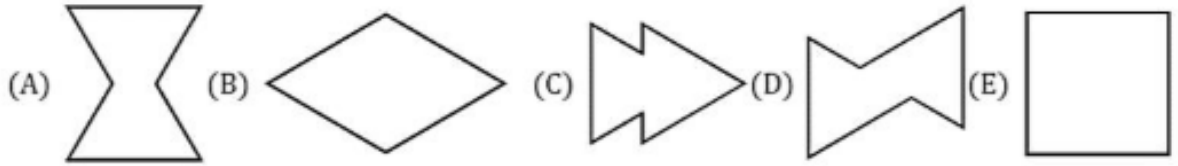
Bonus Slides

Warm Up

MK2008#5

Carol is playing with two identical cards shaped like equilateral triangles as shown in the picture to the right. She puts the cards either next to each other or partially overlaps them. She then traces the figure made on a piece of paper. There is only one shape below that she cannot get in this way. Which one is it?





Hands On

Vocabulary

- Identical – exactly the same
- Apex – the top, pointy part of something
- Horizontally - going across
- Vertically - going up-down
- Increasing order - from the smallest to the largest

Hands On:
Folding, Cutting, and Arranging Shapes

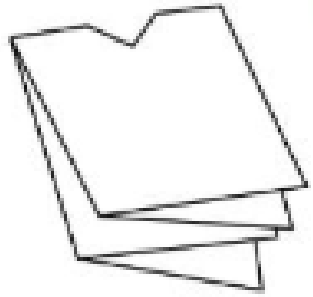
Some Math Kangaroo questions ask you to imagine what will happen if you fold, cut, or arrange shapes.

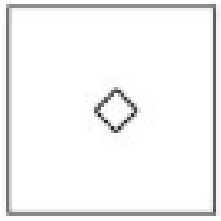
Today we will practice with actually folding and manipulating the shapes. This will help you notice some patterns and will make visualization easier. Having hands-on experience will make it easier and faster for you to imagine the shapes on the MK test.

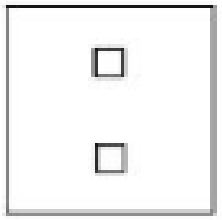
Remember that you can also fold the scratch paper on the MK test.

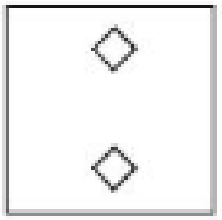
MK2001#3

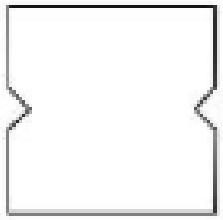
1. Which of the 5 napkins below was made from the cut-out you can see on the right?

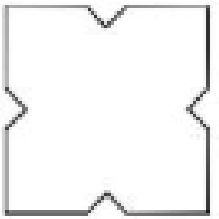


(A) 

(B) 

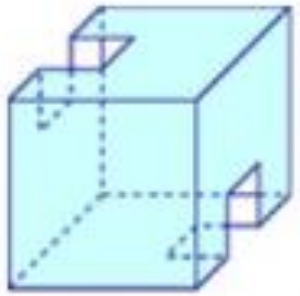
(C) 

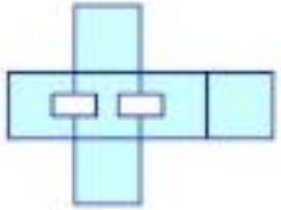
(D) 

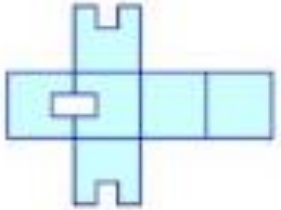
(E) 

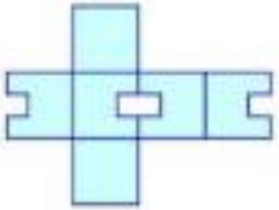
MK2006#9

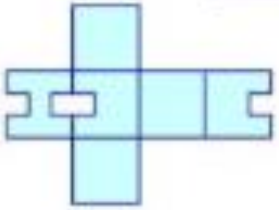
2. Out of which of the figures below can you make the box shown in the picture?

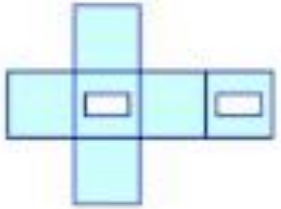


(A) 

(B) 

(C) 

(D) 

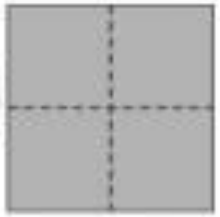
(E) 

MK2017#10

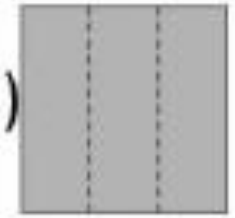
3. Bob folded a piece of paper, then used a hole punch to punch exactly 1 hole in the paper. The unfolded paper can be seen in the picture. Which of the following pictures shows the lines along which Bob folded this piece of paper?

(A) 

(B) 

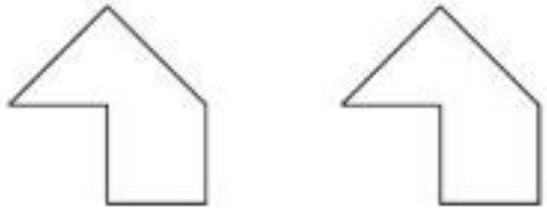
(C) 

(D) 

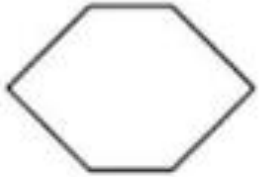
(E) 

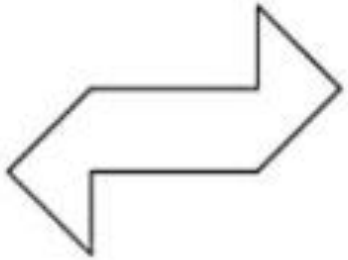
MK2004#11

4. You are given two identical puzzle pieces, and you are not allowed to turn them over. Which figure cannot be made out of these two pieces?



(A) 

(B) 

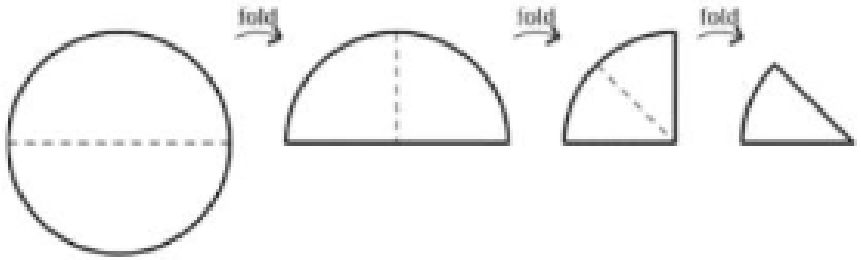
(C) 

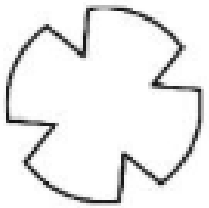
(D) 

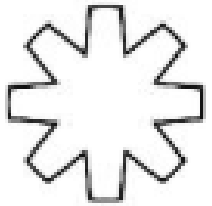
(E) 

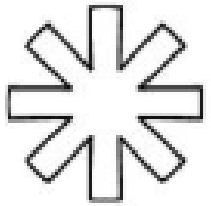
MK2016#21

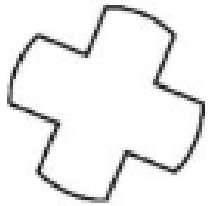
5. Anna folds a round sheet of paper along the middle line. Then she folds it once more and then one last time.
In the end Anna cuts the folded paper along the marked line:  .
What is the shape of the middle part of the paper when unfolded?

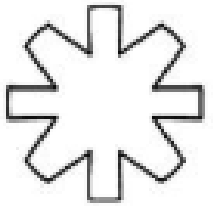


(A) 

(B) 

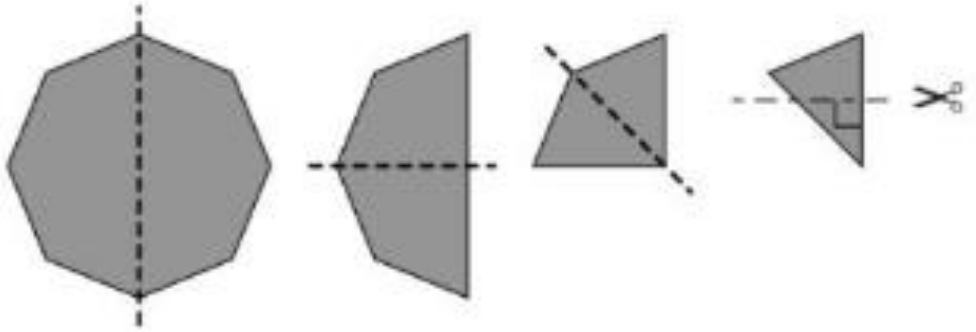
(C) 

(D) 

(E) 

MK2012#20

6. A regular octagon is folded in half exactly three times until a triangle is obtained, as shown. Then the apex is cut off and at a right angle, as shown in the picture. When the paper is unfolded, what will it look like?



(A) 

(B) 

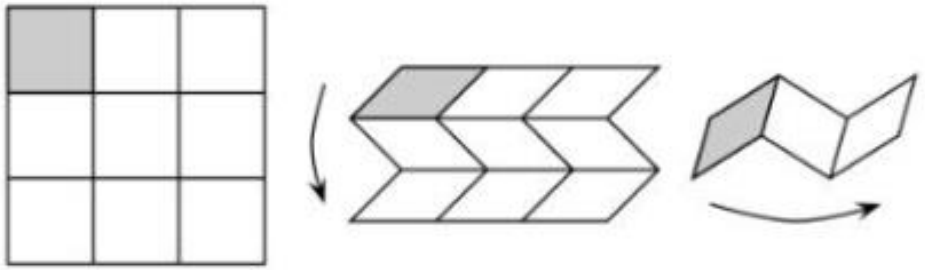
(C) 

(D) 

(E) 

MK2020#28

7. Vadim has a square piece of paper divided into 9 cells. He folds the paper as shown, overlapping horizontally and then vertically so that the gray square ends up on top. Vadim wants to write the numbers from 1 to 9 into the cells, so that once the paper is folded, the numbers would be in increasing order with number one on the top layer. What numbers should he write instead of a, b, and c?



1	a	
		c
	b	

Bonus Question

MK2004#12

Charles holds a sheet of paper in half and then repeats this form four more times. Then he makes a hole in the folded paper. How many holes does the sheet of paper have after unfolding?