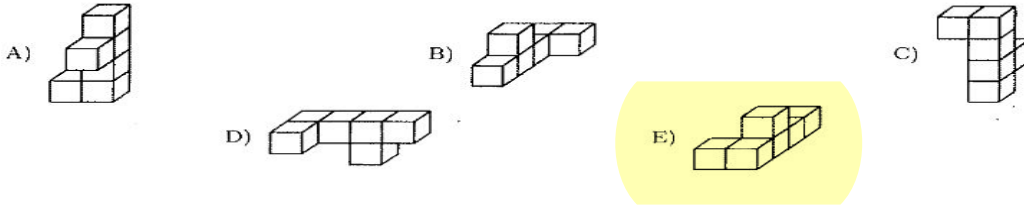Name: _____

MK #6 (SHOW ALL WORK)

1.

Which figure is different from all the others?
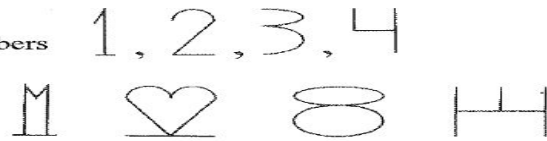
A)

B)

C)

D)

E)

2. There are squares and triangles on the table. They have 17 vertices altogether. How many triangles are there on the table?
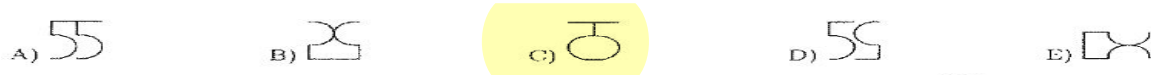
     a) 1   b) 2   c) 3   d) 4   e) 5

3.

In a certain picture you can see numbers 1, 2, 3, 4 and their mirror reflection.
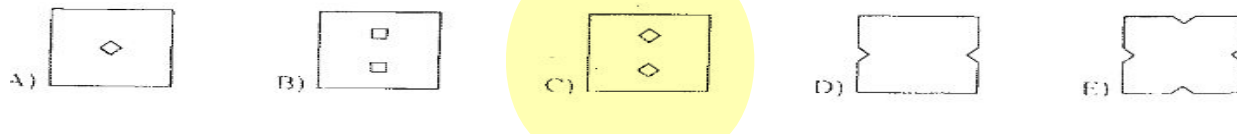
What is the next picture in the sequence of reflections?

A)   B)   C)   D)   E)

4.

Which of the five napkins below comes from this paper cut-out?

A)   B)   C)   D)   E)

5.

Five girls made a square with their beach towels (see the picture). The towels of Ania and Basia are squares with a perimeter of 720 cm each. The towels of Celina, Dorota and Ela are identical rectangles. What is the perimeter of one of these rectangles?
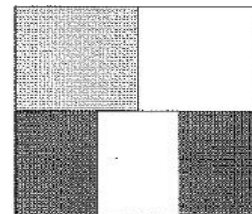
A) 600 cm   B) 560 cm   C) 440 cm   D) 360 cm   E) 300 cm

MK #7 (SHOW ALL WORK)

1.

Tadek has as much money as Witek and Karol have together. Witek has 10 zloty (unit of money) less than Karol. The three boys have 40 zloty altogether. How much money does Witek have?

A) 4   B) 5   C) 10   D) 15   E) 20

2.

I have 11 pieces of candy in each of three baskets. From each basket I take out one piece of candy in the following order: from the left, from the middle, from the right, from the middle, from the left, from the middle, from the right, and so on. What is the largest number of pieces of candy left in one of the baskets when the middle basket is empty?

A) 1   B) 2   C) 5   D) 6   E) 11

3.

The sum of the dots on the opposite sides of a die is seven. We move a die on a grid as the picture shows. The die is rotated once for each square as it is moved as the arrow shows. What is the number of dots on the top of the die when it is located on the square marked with *?

A) 5   B) 4   C) 3

D) 1   E) other number
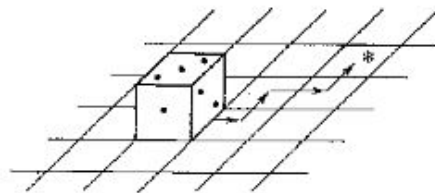
4. When a fair six-sided die is tossed on a table top, the bottom face cannot be seen. What is the probability that the product of the numbers on the five faces that can be seen is divisible by 6?

(A) 1/3   (B) 1/2   (C) 2/3   (D) 5/6   (E) 1

MK# 8 (SHOW ALL WORK)

1 Blocks with all right angles with the dimensions 1cm x 2cm x 4cm are packed as cubes with the dimensions 4cm x 4cm x 4cm. How many blocks make up one of these cube?
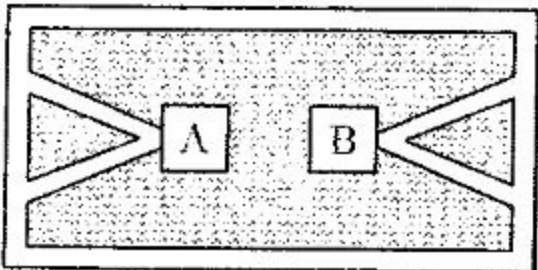   A) 6   B) 7   C) 8   D) 9   E) 10

2. A boy named Peter has as many brothers as sisters. His sister Ann has twice as many brothers as sisters. How many children are there in the family?
    A) 3   B) 4   C) 5   D) 6   E) 7

3. How many two-digit numbers are there where the ones digit is greater than the tens digit?
    A) 26   B) 18   C) 9   D) 30   E) 36

4. In the botanical garden shown in the picture, visitors walk only on the marked paths. In how many different ways can one go from greenhouse A to greenhouse B if you can only walk on a given path once?

    A) 4   B) 6   C) 8   D) 10   E) 12

5. There are altogether 40 Liters of water in two containers. First, 5 liters were poured from the first container to the second, and then enough water was poured from the second container to the first to double the amount of water in the first container. It turned out that at that point, both containers ended up with the same amount of water. How much water was in the second container at the beginning?
    A) 20 Liters   B) 35 Liters   C) 15 Liters   D) 25 Liters   E) 10 Liters

Bonus (Math Riddles):

1. How many seconds are there in one year?

This is a trick question! There are twelve 2nds in a year :) (e.g. Jan 2nd, Feb 2nd,...)

2. When you remove one from eleven, it becomes ten. However, when you remove one from nine, it becomes ten as well. How can that be possible?

Roman Numerals: XI (11) --> X (10) and IX (9) --> X (10)

3. I add five to nine and get 2. This is correct, but how?

5:00 + 9 hours --> 2:00

4. You have 10 cans of peas. The cans are open. In each can, there are 100 peas. In nine of the 10 cans, each pea weighs one gram. In the tenth can, each pea weighs only 0.9 grams. You do not know which can has the smaller peas, nor is it possible to tell with the naked eye. To help you, you have an electronic scale. However, the scale is not in great shape, and can only provide one correct measurement before permanently malfunctioning. How can one, using only the one measurement afforded by the scale, determine beyond a shadow of a doubt which can it is that has the smaller peas?

take 0 peas from the first can, 1 pea from the second can, 2 peas from the third, ... 9 peas from the tenth can. Measuring them, you can figure out which can the lighter peas are from based on the weight shown.

5. Two people, named S and P, are talking about two numbers x and y, with x and y both integers greater than or equal to 2. S knows their sum (x+y), while P knows their product (xy); however, initially NEITHER knows x and y.

S: Hey P! I don't know what the numbers are.

P: I'm not surprised. I KNEW you didn't know. However, I too don't know.

S: You don't? Really! Then I know what the numbers are!

What are the two numbers?

4 and 13