Task 1

Palindrom Numbers with deep greater than 1

Palindrom numbers are «symmetric» numbers. If we read the numbers from right to left we get the same number as if we were reading from left to right.

Examples: 77, 121, 22022022

1234 is not a palindrom number. But if we make a new number by reversing the order and then add the two numbers, we get a palindrom number: 1234 + 4321 = 5555.

We then define 1234 as a “palindrom number of deep 1”.

91 is a “palindrom number of deep 2”:

91 + 19 = 110. Since 110 is not a palindrom number we continue with the sum: 110 + 011 = 121.

After reversing two times the sum is a palindrom number.
We then define 91 as a “palindrom number of deep 2”.

97 is a “palindrom number of deep 6”!

97	176	847	1595	7546	14003
79	671	748	5951	6457	30041
176	847	1595	7546	14003	44044

Find two-digit numbers of deep greater than 1.

Number	Deep	Number	Deep	Number	Deep	Number	Deep

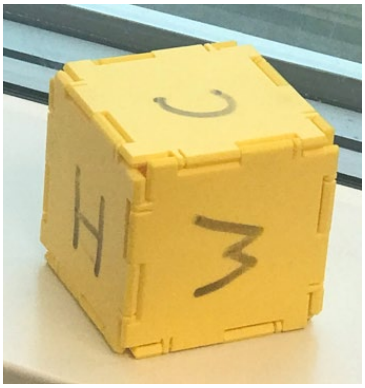
Task 2

Unfolded Cube

Equipment: Work sheet

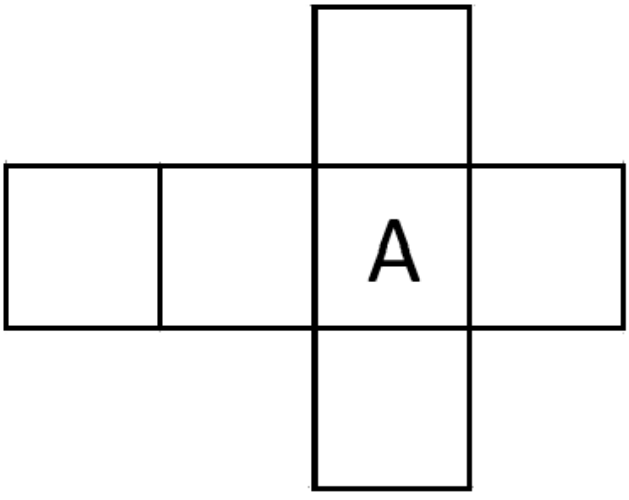
There is a letter at each side of a cube

The pictures show how the letters are placed.

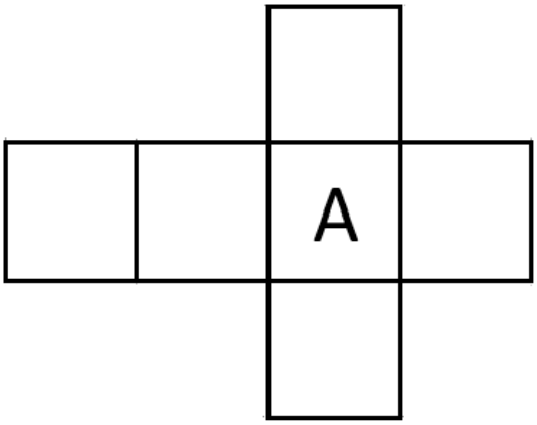


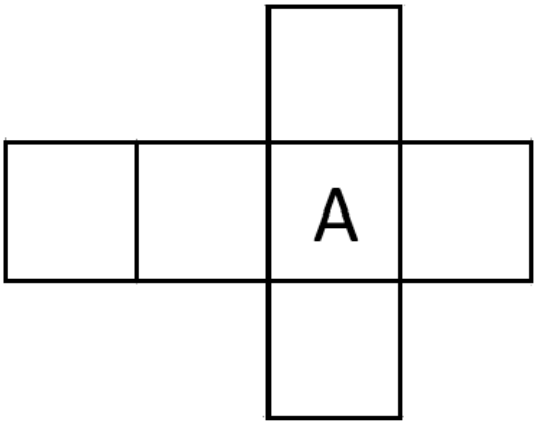
The figure under shows the cube unfolded with the A located in one of the squares.

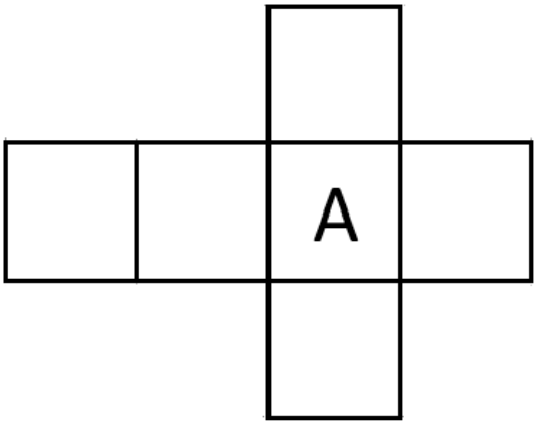
Locate the other five letters in the squares with the shown orientation.

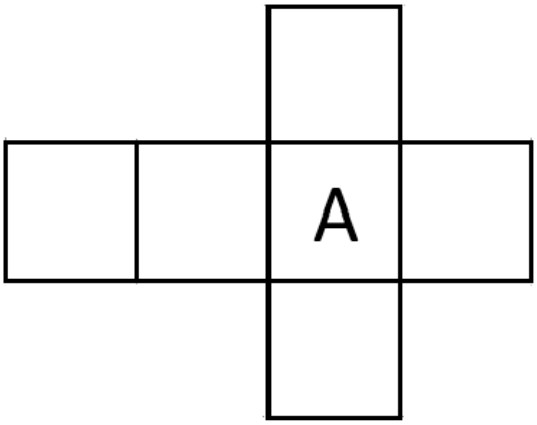


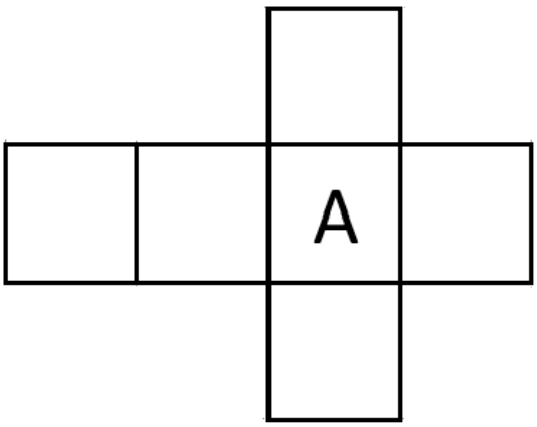
Work Sheet Task 2

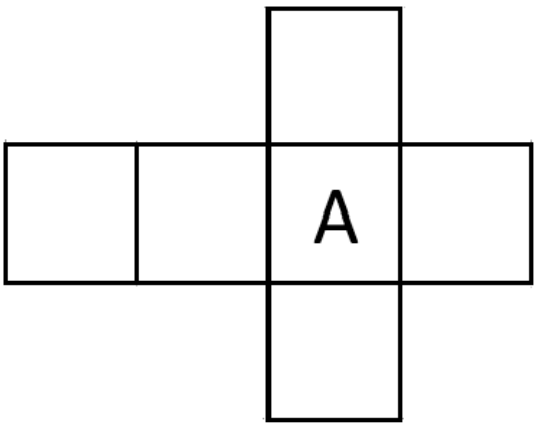












Task 3

Scale up the figure

Equipment: Sheet with gridlines

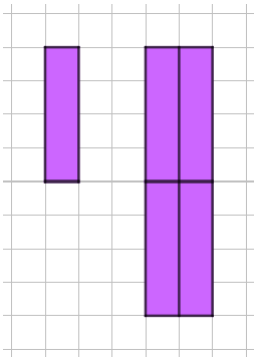


Figure 1

An I is made of four squares.
If we use four I's, we can build a bigger I in scale 2 : 1.
See Figure 1.

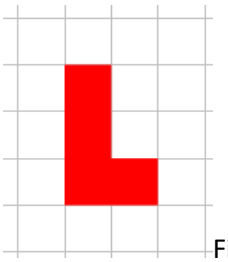


Figure 2

The letter L is made as shown at Figure 2.

a) It is possible to scale up the L by putting together L's.
b) In which scales is it possible to make bigger L's?

Answer

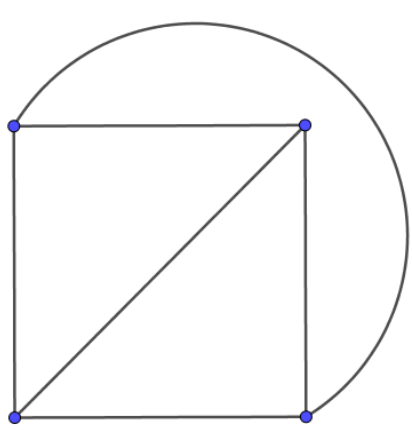
a) Show examples at a sheet with gridlines.

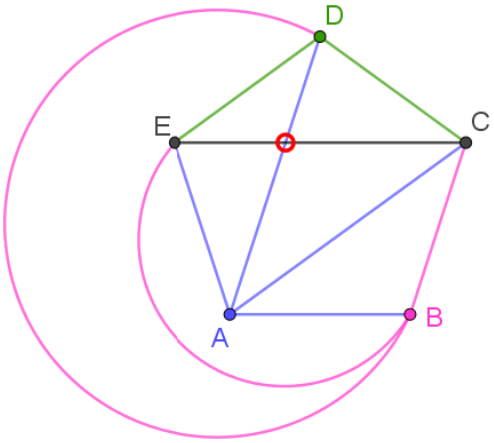
b)

Task 4

How many crosses?

Equipment: Work Sheets Task 4a and Task 4b





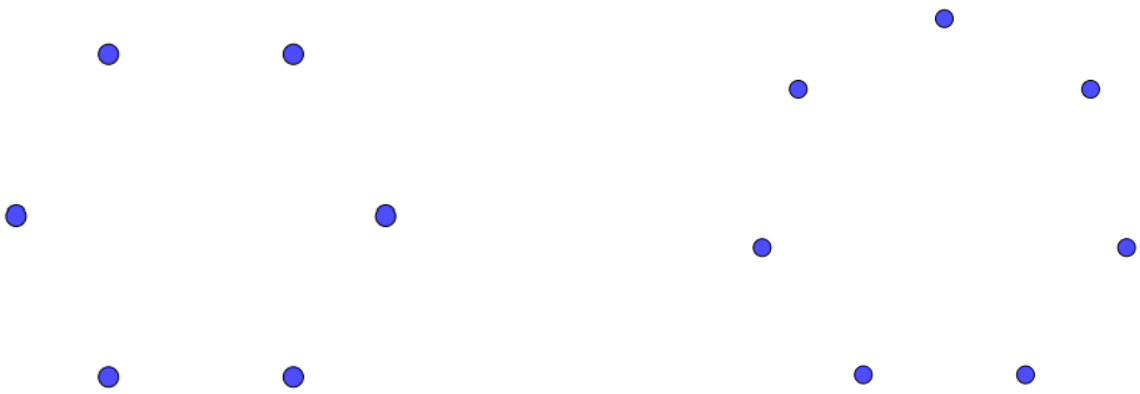
It is possible to combine four points with lines without any lines crossing each other.

If we try to combine five points with lines, we can't avoid two lines to cross.

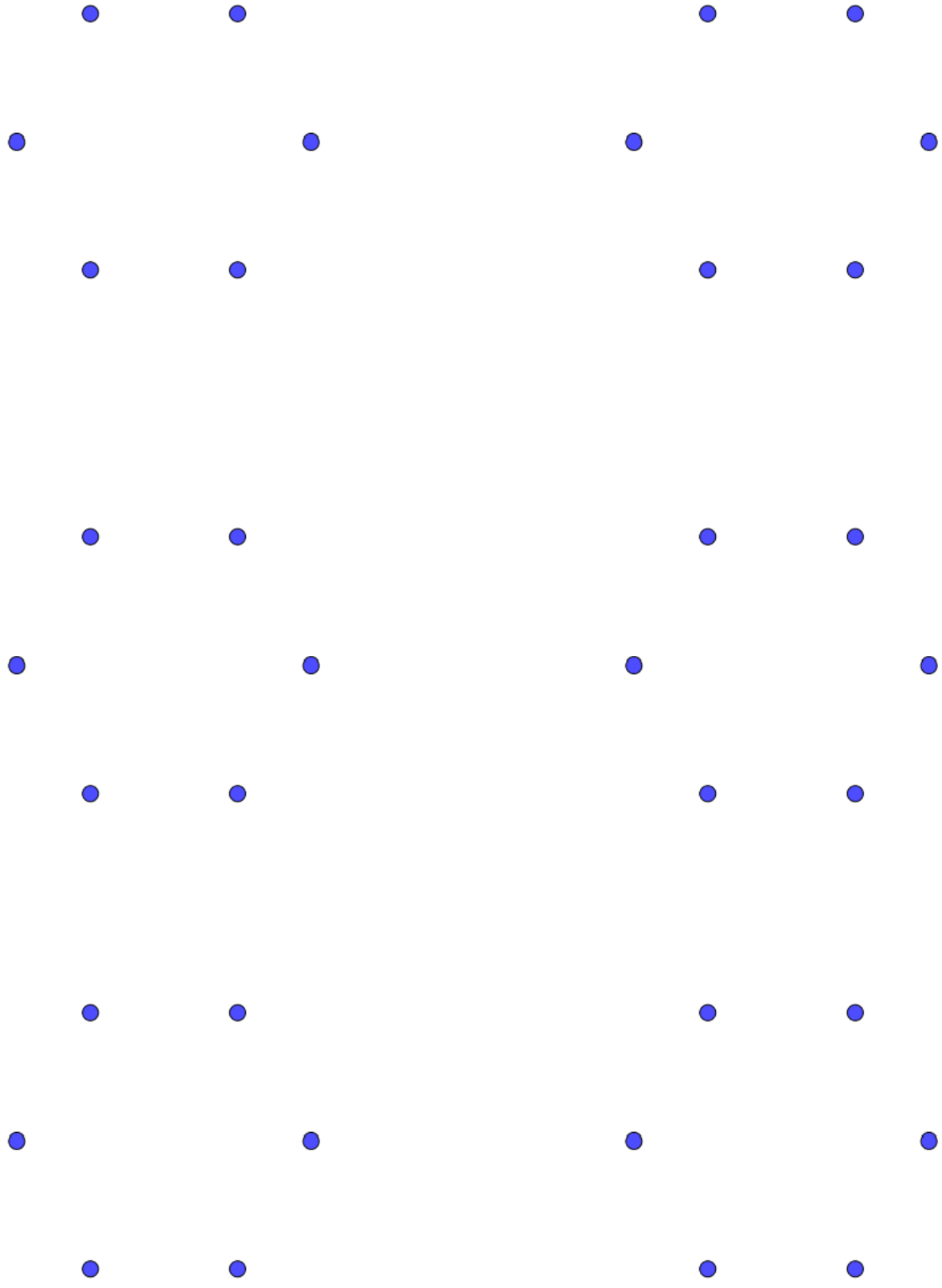
a) Combine six points with lines in such a way that you get as few crossings as possible.

b) The same challenge with seven points.

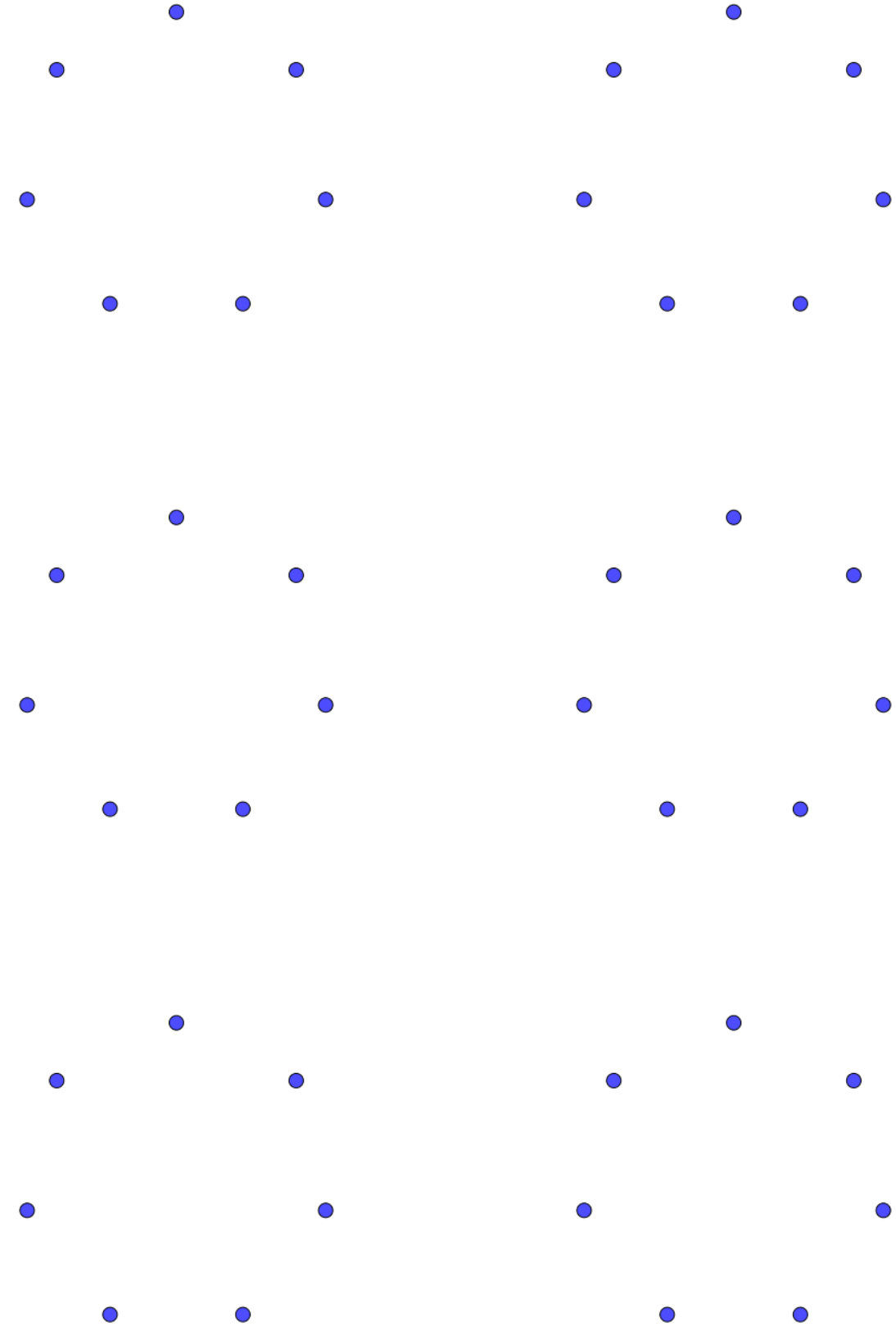
Answer Country:



Work Sheet Task 4a



Work Sheet Task 4b



Task 5

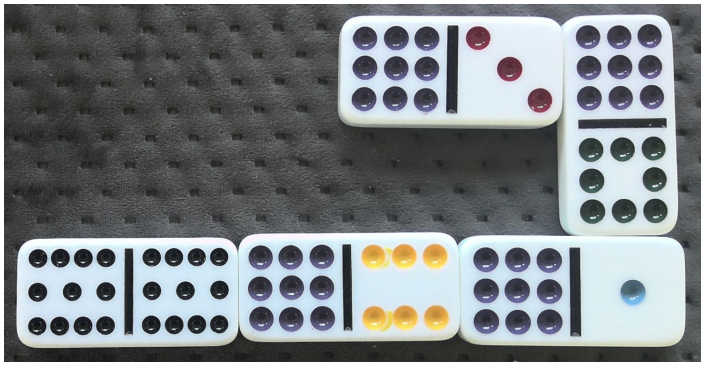
Domino Train

Equipment: 45 Domino pieces

You have 45 domino pieces with all possible combinations of the numbers 0-8.

The goal is to make a «train» as long as possible in such a way that the product of the two numbers that are put together is an even number greater than 5 and less than 39. The number in the ends is not used in any multiplication.

Example



11 x 9 = 99 6 x 9 = 54

Leave your train at the desk.