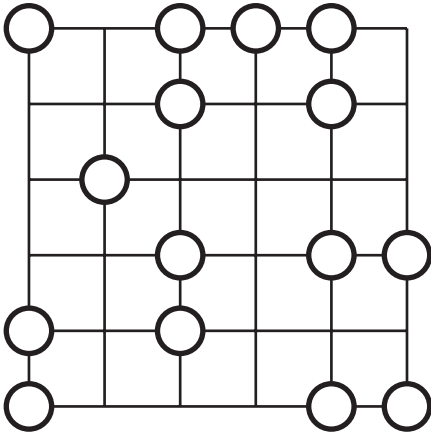


## 3. Bigger paths

7



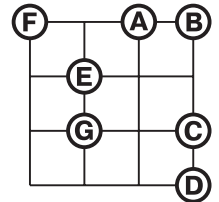
White circles represent points named by letters from A to O. XY - length of the shortest path from X to Y, passing along grid lines and not passing through other points. Some comparisons are known.

**AB < CD < EF < CG < HI < EJ < BK < FJ < LM < JM < HN < DL < MN**

Name all the points.

Answer key: write down letters in order from left to right, working downwards. For example the answer would be: FABEGCD.

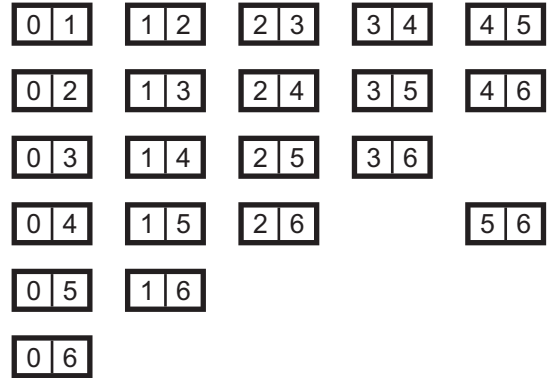
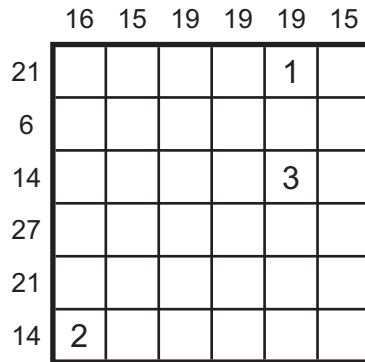
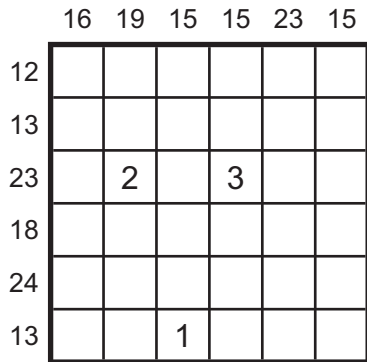
Example:



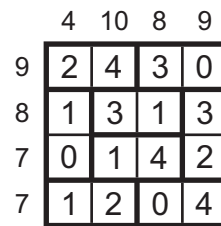
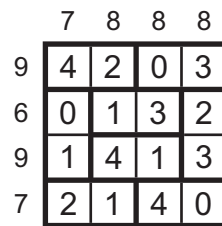
AB < BC < AC < DE < DF < BF

## 4. Domino dancing

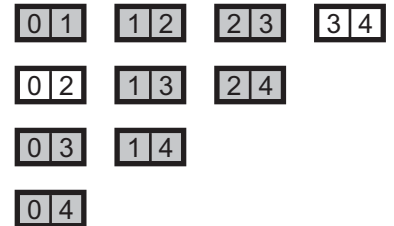
8



Place in grids 18 dominoes out of the full set without doubles. Numbers on top and left show the sum of half-domino values in corresponding rows and columns. The only difference between these grids is that all dominoes are rotated by 180 degrees. Half-dominoes with same values cannot touch each other by side in any grid.



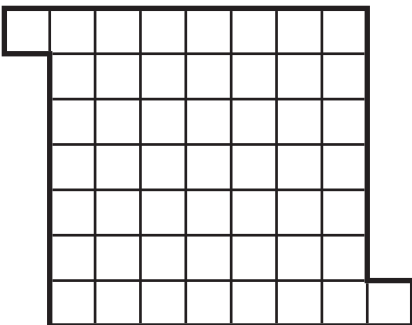
Example:



Answer key: write down not used dominoes. For example the answer would be: 0-2, 3-4.

## 5. Optimal input

≤ 8



- ONE
- FIVE
- NINE
- TWO
- SIX
- TEN
- THREE
- SEVEN
- ELEVEN
- FOUR
- EIGHT
- TWELVE

Place all of the twelve words, corresponding to numbers from 1 to 12, into the grid by writing each one in a continuous line from letter to neighbouring letter. Maximize the area of any three connected "letter-group"s of your choice (all three must form a connected shape); each "letter-group" having two or more of the same letter connected by sides.

Answer key: first write down the area of your shape in square units. Then describe the content of your grid row by row, from top to bottom. For example the answer would be: 8: NUYR, AARUA, JARRB, AMCHE, PRILF. Best answer brings 8 points, each next answer brings one point less.

Example:

