Turnio

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1 Motivation

Its the job of Albert and Boris to tile bathrooms. Albert likes tiles which form circles, Boris instead prefers squares. Whenever they worked together they spent more time on disputing than on working. Once a time two palettes of tiles were destroyed (one forming circles and one with squares), so something had to change. Since that day Albert and Boris use only tiles which can be used to form circles and squares as well and they play „Turnio“ during their working time.

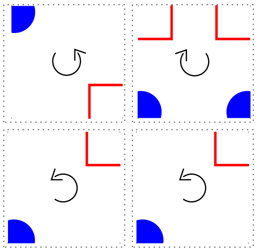
2 Ingredients

The game contains:

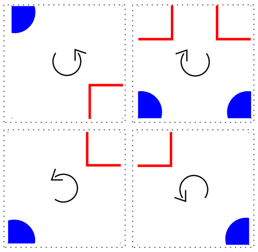
- this rules
- a board
- 40 chips

3 Aim of the game

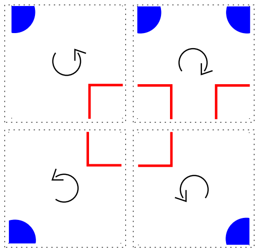
It is a tactical game for two players of age 10 or older.
The chips show on two or four corners quarters of circles or squares. Each player represents exactly on of these symbols. The player try to place or turn the chips in a way, that quarters are located side by side frequently, i.e. they try to complete their symbols. Two quarters of the *same* symbol placed side by side are called a *pair*. Quarters which touch only at the corner, i.e. which are placed diagonally are by definition *not* a pair. For each pair a player gains one point. That means a half of a symbol is worth one point, three-quarters two points and a complete symbol gives four points. The player who has collected more points at the end is the winner.
In the following situations three examples are presented. In the middle of the small pictures, where the four chips meet, you can see two, three and four pairs respectively. The second situation is created from the first by turning the chip in the lower right by 90 degrees counter-clockwise. Then the third situation is obtained by turning the chip in the upper right corner two times.



One pair (square)
= half a symbol
= 1 point



two pairs (square)
= three-quarters of a symbol
= 2 points



four pairs (square)
= a complete symbol
= 4 points

4 Preparation of the game

The board is placed on a table or somewhere else. The two chips showing a X are removed. They are necessary for a variant of the game. The other 38 chips are turned upside-down with their symbols unvisible and they are shuffled.

5 The board

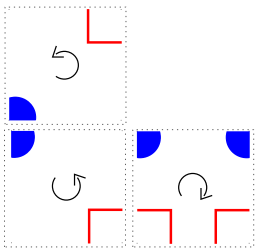
The board contains $6 \times 6 = 36$ domains. During the game exactly one chip is placed in each of the domains. All domains have the same meaning.

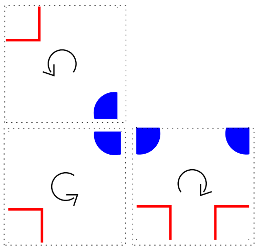
6 How to play the game

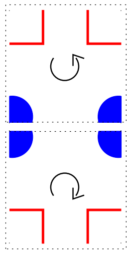
The younger player starts and chooses the symbol he/she likes, the second one takes the other symbol. The younger player starts the game. Both players make moves alternately. Each move consists of three parts:

1. Taking and revealing of one chip.
2. Placing the chip on an *empty* domain on the board.
3. Turning at most one chip on the board by 90 degrees in the direction the arrow on the chip indicates.

Attention:
Except from the first move a chip must be placed side by side to a chip which is already on the board, i.e. it must have an edge in common with at least one chip. Apart from that a chip can be placed arbitrarily, i.e. independently of the symbols it shows. The orientation of the chip is any you like as well.
It is only allowed to turn a chip which participates in at most one pair of quarter-symbols. Chips which take part in two or more pairs are called *fixed*. In the following examples the chip in the lower left corner is fixed. In the first example there is one pair for each symbol, while in the second the chip is fixed using two pairs of quarters of circles. The other chips are not fixed here.







It is only possible to resolve the fixing of a chip by turning its neighbors adequately. It implies that two neighboring chips, which form two pairs, can never be turned, as can be seen in the example to the right. Also four chips which form a complete symbol are fixed forever.
Chips are always turned in the direction which is indicated on them. That implies that three additional turns are needed to return a chip into its original position after one turn.
No player is forced to turn a chip, i.e. he/she can omit this part of a move. It is not possible to omit the placing of a chip on the board. That means a player cannot collect some chips and place them together within one move.
Remark: Each chip contains the same number of quarters of each symbol, i.e. one or two quarters of a circle and one or two quarters of a domain. There are 20 chips which show four quarters and 18 chips containing two quarters. Additionally there are different arrangements of the quarters. Finally half of the chips can be turned clockwise and half of the chips counter-clockwise.

7 The End

The game is finished when it is not possible to place any chip. This implies that each player has 36/2=18 moves. At the end two chips are left since there are 38 of them.

8 Who wins ?

For each player all pairs are counted. This can be done by systematically visiting all corners of domains on the board. For a pair one point is counted, three-quarters of a symbol are worth two points and a full symbol gives four points.
The player which has the maximum number of points has won. If both players have the same number of points the result is a draw.

9 A variant of the game

Each move is extended by a fourth and *last* part: A player can place a chip showing a X on a free domain on the board, change a location of a X-chip or remove one. If apart from the domains having a X-chip no free domain is left, a X-chip has to be removed, so the other player is able to perform his or her (last) move.
Meaning: It is not allowed to place a chip on the domains where a X rests. That means it is possible to protect domains for some time.

Have much fun

whishes

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