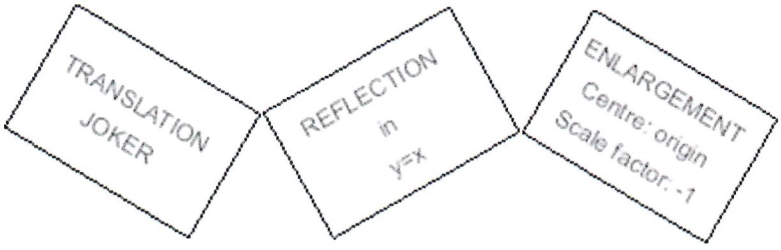
Transformation Game

Created by nrichmaths.org

You will need:

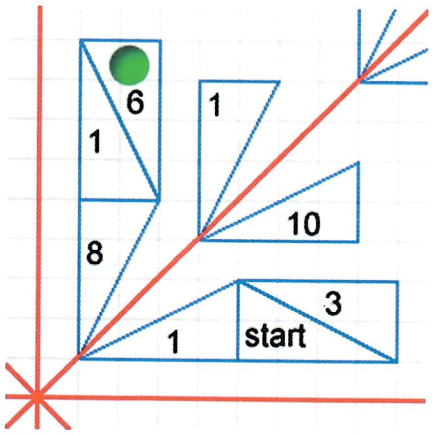
- Board - print this and then enlarge onto A3 paper with a photocopier if you have access to one. Otherwise, you can print it on two sheets of A4 paper and join them together using the bigger version.
- Cards - print this sheet three times and cut out the cards to make a pack of 45 transformation cards.



- Counter (you could cut out a triangle to use as a counter)
- 2 - 4 players

How to play:

- Shuffle the cards, deal five to each player and place the rest of the pack face down on the table. Put the counter on the triangle marked "start".



- Players take it in turns to move. When it is a player's turn, s/he must try to move the playing piece from where it is on the board to another of the marked triangles. S/he

must use a transformation or combination of transformations corresponding to one or more of the cards in his/her hand. In the case of more than one card, the intermediate positions of the playing piece need not correspond to a marked triangle.

- When a player has moved, s/he throws away the card or cards s/he has used, and replaces it (or them) with cards from the unused pile.

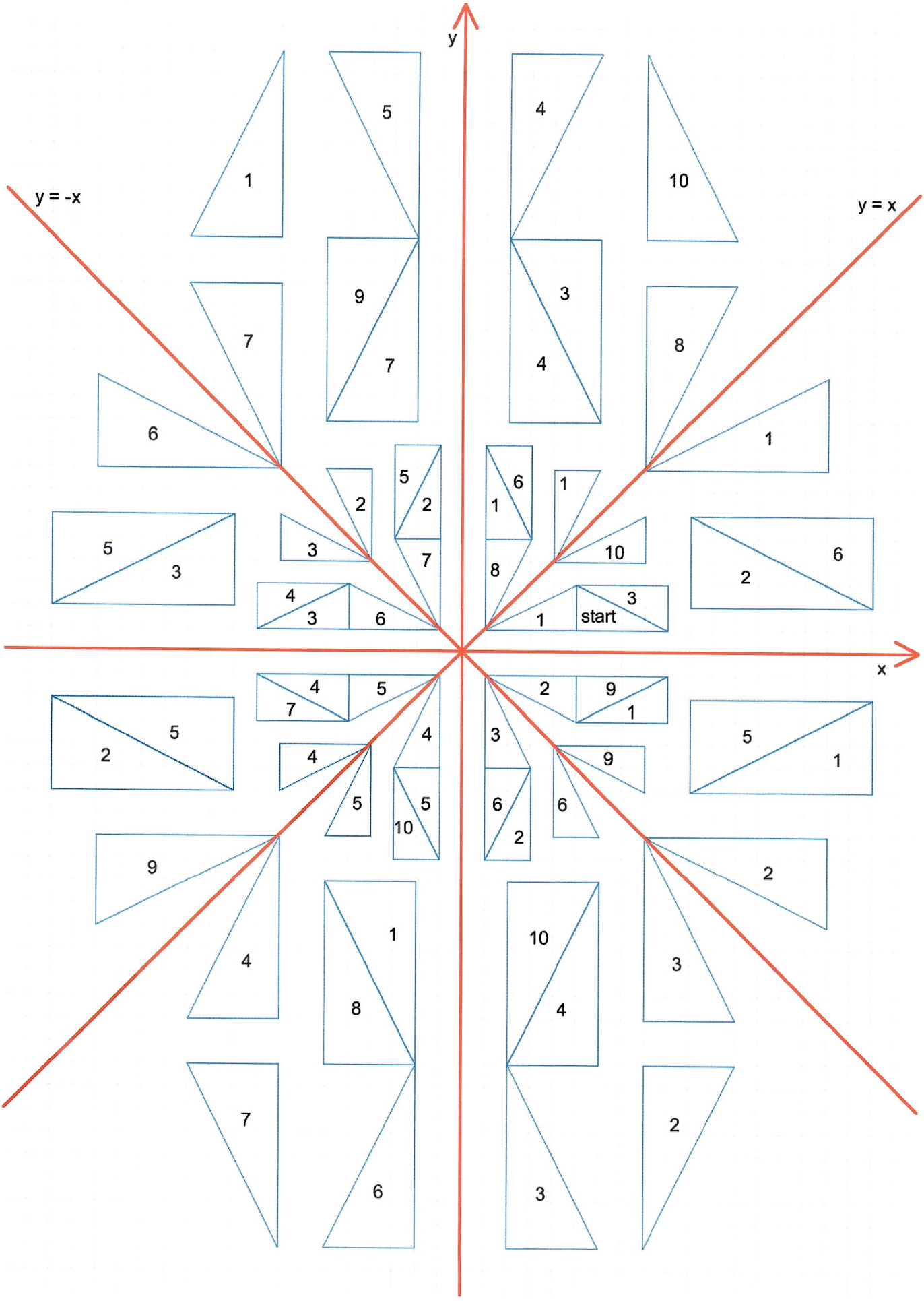
- The player scores the number of points corresponding to the number on the triangle where s/he finally lands.

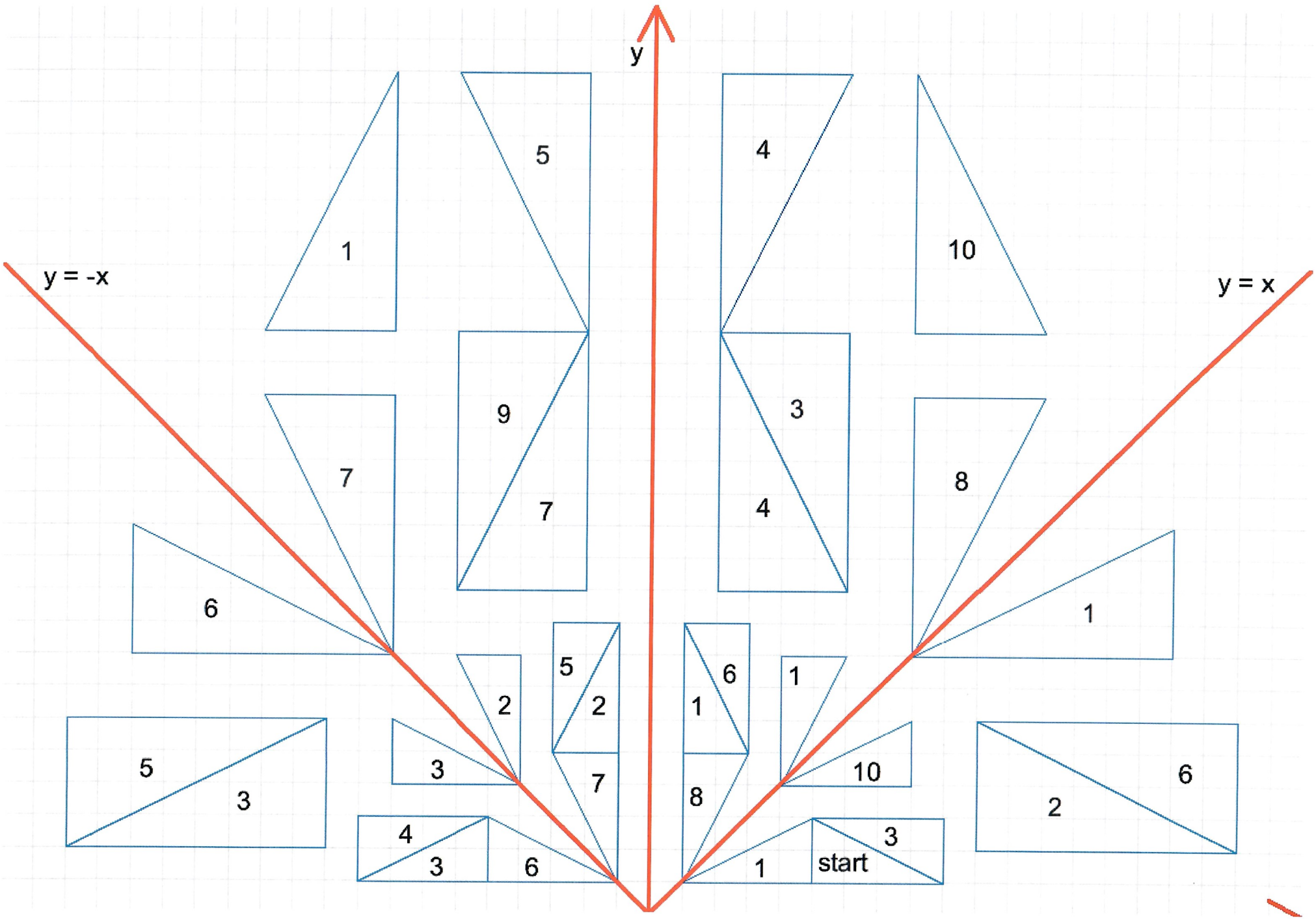
- If a player cannot move (or does not wish to move), s/he may throw away one card and replace it with another.

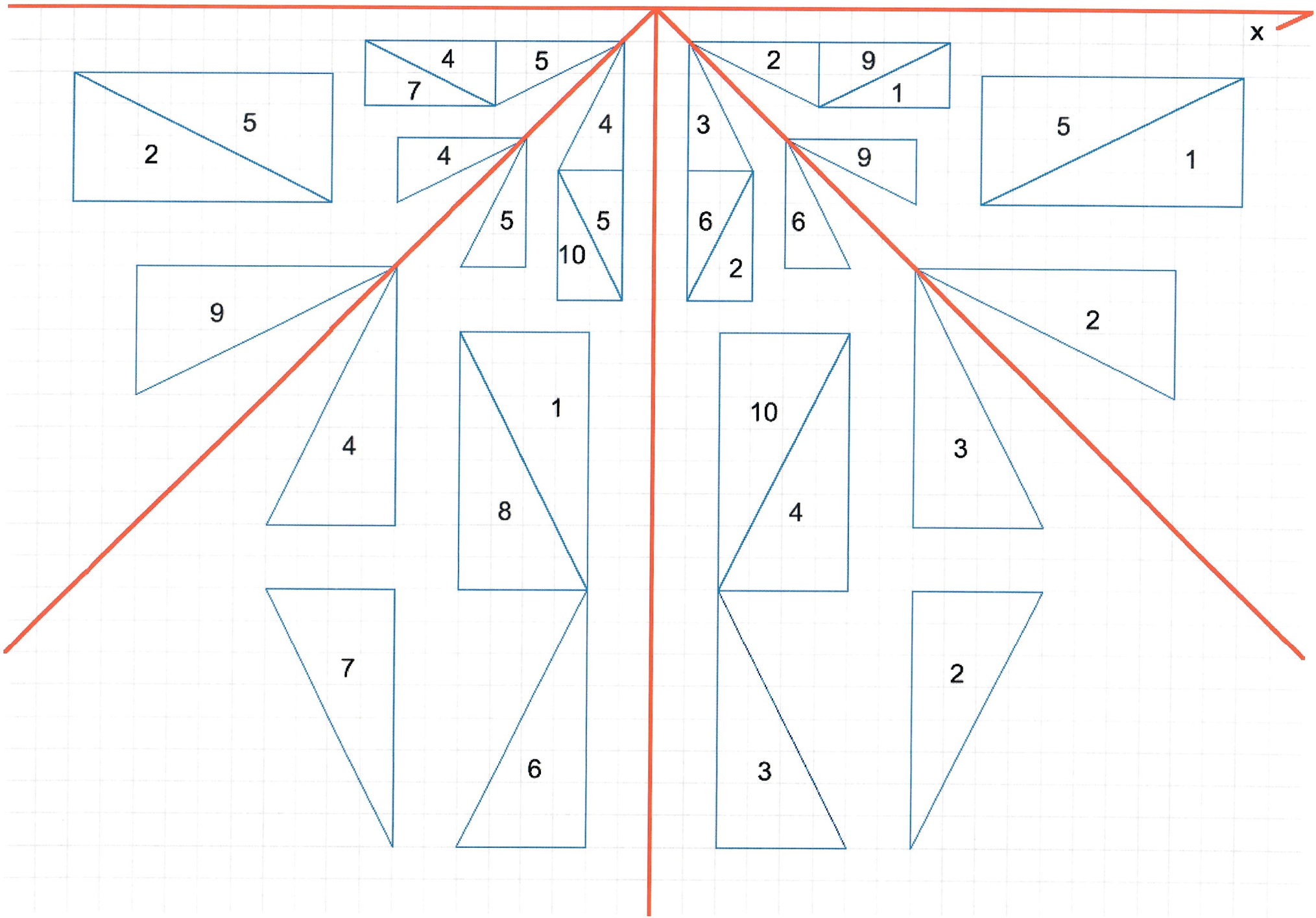
- When using a joker, a player must announce what it represents before s/he uses it.

- If a player makes a mistake, the playing piece is returned to its last position and the player at fault misses that turn.

- The game ends when the pile of unused cards is empty and no one can move. The player with the highest total score wins.


y
x
y = -x
y = x
start


y
y = -x
y = x
1
5
4
10
9
7
3
4
7
8
6
1
5
2
2
6
1
1
5
3
3
7
8
10
6
2
4
3
6
1
3
start


x
4
5
7
2
5
4
4
5
5
10
9
1
4
8
7
6
2
9
3
9
6
6
2
5
1
2
10
4
3
2
3

REFLECTION in $y = -x$	**REFLECTION** **JOKER**	**REFLECTION** in $y = x$
REFLECTION in y-axis	**REFLECTION** in x-axis	**ROTATION** Centre: origin **JOKER**
ROTATION Centre: origin Angle: 90° Direction: clockwise	**ROTATION** Centre: origin Angle: 90° Direction: anticlockwise	**ROTATION** Centre: origin Angle: 180° Direction: --
ENLARGEMENT Centre: origin Scale factor: -1	**ENLARGEMENT** Centre: origin Scale factor: -2	**ENLARGEMENT** Centre: origin Scale factor: ½
ENLARGEMENT Centre: origin **JOKER**	**TRANSLATION** **JOKER**	**ANY** **TRANSFORMATION** **JOKER**

REFLECTION in $y = -x$	**REFLECTION** **JOKER**	**REFLECTION** in $y = x$
REFLECTION in *y*-axis	**REFLECTION** in *x*-axis	**ROTATION** Centre: origin **JOKER**
ROTATION Centre: origin Angle: 90° Direction: clockwise	**ROTATION** Centre: origin Angle: 90° Direction: anticlockwise	**ROTATION** Centre: origin Angle: 180° Direction: --
ENLARGEMENT Centre: origin Scale factor: -1	**ENLARGEMENT** Centre: origin Scale factor: -2	**ENLARGEMENT** Centre: origin Scale factor: ½
ENLARGEMENT Centre: origin **JOKER**	**TRANSLATION** **JOKER**	**ANY** **TRANSFORMATION** **JOKER**

REFLECTION in $y = -x$	**REFLECTION** **JOKER**	**REFLECTION** in $y = x$
REFLECTION in *y*-axis	**REFLECTION** in *x*-axis	**ROTATION** Centre: origin **JOKER**
ROTATION Centre: origin Angle: 90° Direction: clockwise	**ROTATION** Centre: origin Angle: 90° Direction: anticlockwise	**ROTATION** Centre: origin Angle: 180° Direction: --
ENLARGEMENT Centre: origin Scale factor: -1	**ENLARGEMENT** Centre: origin Scale factor: -2	**ENLARGEMENT** Centre: origin Scale factor: ½
ENLARGEMENT Centre: origin **JOKER**	**TRANSLATION** **JOKER**	**ANY** **TRANSFORMATION** **JOKER**