

ΛΒΛΛΚΥ ΕΟΥ

GAME RULES

## Aim of the Game

Abaku is a numeric game for one to four players. Anyone who knows that  $1 + 1 = 2$  can play. To win the game, you'll need something more: you have to choose the right strategy, show a good imagination, memory, combinatory skills and logical thinking, and you can use a bit of luck, too.

## Gameplay

Players take turns clockwise. Player on turn has three options:

- place tiles on the game board;
- change tiles;
- skip the turn.

The player on turn chooses one of these options and performs it. After that, other player takes turn.

In Abaku game, players are using tiles marked with numbers (0-9) to create arithmetic operations on the game board. The arithmetic operation must always consist of one of the following operations: addition, subtraction, multiplication, division, squares and cubes of whole numbers, and square and cube roots of whole numbers. Players get points according to the numerical value of the tiles used in the operations.

## Game Description

1. The starting player makes the first move by placing vertically or horizontally two or more tiles on the board so that one of them lies on the central square.
2. The next player must place the tiles on the board so that at least one these tiles directly adjoins any tile which is already on the board (laid in any of the previous turns - with only one exception for the first turn in game). All tiles laid in one turn must be laid either vertically or horizontally. It is not allowed to lay tiles in simultaneously in more than one row of column.
3. All tiles laid in one turn must be part of new number operation. Valid operation is the one which is legible in left-to-right or top-to-bottom directions, never the other way around or diagonally. Newly laid tiles don't need to lay exclusively next to each other, but a number operation must exist everywhere where new tiles adjoin old tiles - see image examples below (with only exception for the zero rule described below).
4. The game does not contain any mathematical symbols, not even for the powers and roots. Thus the player must think the turn through (e.g. laying 314: three plus one

equals four; 211: two minus one equals one; 236: two times three equals six; 842: eight divide by four equals two; 24: two squared equals four; 644: cube root of sixty four equals four etc. After ending their turn players are presented with an animation in which all created number operations in such turn are shown with the symbols (if the combination is valid).

5. Even though the tiles represent particular operations in particular turns, with every new turn they are considered just as a cluster of tiles which can be used in any way possible and could be part of new number operations.
6. Number operations are created:
  - a. Adding one to five tiles to those already placed on the board. (see Turn 2, 3, 4, 5, 6.)
  - b. Placing an operation crosswise to the tiles on the board. This new operation must include one or more tiles laid already on the board or should be adjoined with one or more tiles already on the board. (see Turn 3, 4, 6.)
  - c. Placing an operation parallel to the tiles on the board. (see Turn 5, 6.)
7. Player on turn has three options: lay tiles on the board; change tiles; skip the turn. The player can use only one of these options per turn.
8. New number operation cannot start with zero. Zero cannot be added, subtracted, multiplied or divided by. Zero cannot be the result of number operation. If the zero is a part of new number operation, none of the tiles adjoining to the zero must form a number operation. There are no points from such adjoining operations (see Turn 5). Eighth and then every other zero (for one player) is wildcard tile which can be turned into whichever number. Wildcard tiles work like a joker card in card games and you can (by clicking on the tile in your stack) change its value to whichever you want and then use the tile as any other tile.

## Examples of Number Operations

- Newly laid tiles are in dark gold colour.
- Newly created equations have black borders.



**1**



**2**



**3**



**4**



**5**



**6**

## Finishing the Game

1. There are no tiles in player's tile bag and one of the players used their last tile on the board;
2. Player passes three consecutive turns (exceeding the time limit per turn is considered as passing as well). If there are any tiles in tile bag, player loses by default. If the tile bag is empty, the game end regularly.
3. Player surrenders.

## Scoring

1. The points are calculated after end of every turn. The numbers on the tiles represent their values.
2. All the tiles used in all new number operations are counted in. Tiles used in new operations are counted in for every each operation they form. If the same tiles form more than one operation they count only as one operation (e.g. tiles 981 form both  $9 - 8 = 1$  and  $9^2 = 81$ , but only one operation counts) But if you place 5 before the row 6873, two valid operations are formed:  $5 + 68 = 73$  and  $56 : 8 = 7$ . It doesn't matter that the numbers used in second operation are part of the first operation as long as they are just a subset.
3. Bonus:
  - a. Is valid only for the given turn (when a tile is placed on it).
  - b. Bonus for a tile: The value of tile laid on bonus square is doubled or tripled.
  - c. Bonus for an operation: The value of whole operation is doubled or tripled if one of the tiles used in such operation is placed on bonus square. If any of the tiles used in the operation is also laid on the square with square bonus the operation bonus is based on already the multiplied value of such tile!
  - d. Bonuses of both types can be obtained only in a turn in which a tile has been placed on bonus square. And if such tile is part of more than one operation, you'll receive bonus for every one of them!
4. Player who lays the last tile on the board and thus ends the game also gains extra points in sum of all tiles remaining in opponent's rack. The same number of points is also subtracted from opponent's total points.
5. Player who has the highest score at the end of the game wins the game.

## Strategy

1. Use as many bonus fields as possible. Their wise use significantly influences the result of the game. (E.g. it's much more profitable to lay combination 9211 with the tile 9 on 3x-square-bonus square than laying the whole combination on 2x-operation-bonus square, because  $9 * 3 + 2 + 1 + 1 = 31$  points, while  $(9 + 2 + 1 + 1) * 2 = 26$  points.)
2. Place the tiles next to a row of tiles and thus create as many operations as possible (E.g. by laying tiles 8 and 2 to row 7936 you create  $82 - 79 = 3$ ;  $27 + 9 = 36$ ;  $27 : 9 = 3$ ;  $2 + 7 = 9$ .)
3. Place the tiles in such way that the opponents have limited possibilities to profitably place their tiles. (Especially refrain from allowing them to use bonus squares. Sometimes it's better to settle for less points than to open access to the bonus square, which you cannot use right now. This mostly applies to the 3x operation square.)
4. Placing tile 0 is usually a big problem for beginners (E.g. placing tile 0 at the end of row 38240 creates  $38 + 2 = 40$  and  $3 * 8 = 24$  or by adding 0 to row 8199 you create  $81 + 9 = 90$  and  $81 : 9 = 9$ .)
5. Numbers on tiles equal the values of the given tiles. Therefore learn to use them wisely and lay them next to such tiles which that allow creation of as many operations as possible.
6. If you think that your tiles are worse than your opponent's, then:
  - a. you might be right, because the tiles are drawn randomly you can just have bad luck, or
  - b. you might be wrong, because the opponent is more skilled than you, i.e. they count better, they use better strategy and combine the tiles in the rack with the ones on the board much more wisely.
7. Don't be overly satisfied with higher score in the middle of the game and also don't lose your courage if you are losing. One great turn or lucky draw can change everything.
8. Strategy and tactics are not unchangeable. In time you'll improve and develop your skills.
9. Never give up :)

In no time you'll discover that the real deal is to find a combination that "rhymes" well. Such combination is called "COMBO". What combination is that? The one that contains at least three number operations. Such row usually means great point gain. E.g. row 16824 contains number operations  $16 + 8 = 24$ ;  $16 : 8 = 2$ ;  $8 : 2 = 4$ ... And in the next turn you can append tile 7. What is 168247?  $168 : 24 = 7$ . There is a countless number of such combinations and

you yourselves will soon discover your own ones. Those who remember them have a great advantage in the game.