

QUALIFICATION FOR THE
DUTCH
Puzzle and Sudoku CHAMPIONSHIPS 2024

Friday $8^{\text {th }}$ Until Monday $11^{\text {th }}$ of March 2024

## Instruction booklet

ORTEC
OPTIMIZE YOUR WORLD

Dear participants to the
Dutch Puzzle and Sudoku Championships 2024,

These Championships are being organized by the Dutch Puzzle Association WCPN (World Class Puzzles from the Netherlands) in association with ORTEC, one of the world leaders in optimization software and analytics solutions.

Like last year, the championships will consist of two parts:

- An online qualification, for both championships, that will be held from Friday March $8^{\text {th }} 12: 00$ CET (noon) until Monday March $11^{\text {th }} 11: 59$ CET (noon).
- A live final that will be held on Saturday April $13^{\text {th }} 2024$, at the office of ORTEC. The address of ORTEC being: Houtsingel 5, 2719 EA Zoetermeer, the Netherlands.

This Instruction Booklet is only applicable for the qualification round. About two weeks prior to the finals a separate Instruction Booklet for the finals will be published.

In this Instruction Booklet you will find all necessary information about the online qualification for the championships; amongst which the program, the rules and regulations and example puzzles and sudokus, including solutions. You will also find the amount of points granted for each puzzle, so you can decide in advance which puzzles you want to solve.

We wish you lots of fun preparing and good luck during the qualification.

On behalf of WCPN,

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P.S. We would like to thank all puzzle authors; Bram de Laat, Arvid Baars, Saskia Benedictus en Richard Stolk; thank you!
We also give thanks to Karin Griffioen, Eline Werkman and Timon van Dijk for their technical support (IT) and for their help in organizing the championships!
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## Overview Puzzle Qualifications 2024

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total points 600

## Points

Overview Sudoku Qualifications 2024

## Sudoku

## Points

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3. Classic 102
4. Clone 38
5. Non Consecutive 41
6. Palindrome 51
7. Coast to Coast 56
8. X-Sums 61
9. Sandwich 66
10. Round Off 81
total points
600

When you submit your solutions within the given time limit of 60 minutes, 10 bonus points will be granted for every full minute your solutions were received before the time limit expires. The time of receival, noted upon your solution form is binding.

Pay attention: the number of points are an indication of the difficulty of the puzzles during the actual qualification. The difficulty of the puzzles in this booklet can deviate from these values!

## The qualification rounds

The qualification consists of two rounds of 60 minutes each; one round for the Puzzle championship and one round for the Sudoku championship. Although the qualifications consists of two separate championships, and you are not obliged to take part in both, it is highly recommended that you do participate in both qualifications. The selection for the live finals will be based on the ranking of both qualification rounds. Hence, by participating in both rounds, your chances for being invited to the live finale will enhance.

## Who can participate

Everyone who likes logical puzzles and sudokus can participate in the qualifications. During the qualification three categories of participants will be distinguished:

- members of the Dutch Puzzle Association WCPN
- participants from our sponsor ORTEC
- other interested people

After the online qualifications, the best participants from the categories of WCPN and ORTEC will be invited to participate in the live championships.

## How to participate in the qualification

To participate you first have to register online on the website of the championships (nk.wcpn.nl or click here). Use your own name (don't use an alias) to register and submit answers.
If you took part in the qualifications last year, we recommend that you use the same account as last year. After the qualifications you will have access to your personal statistics, where you can compare your results to those of previous years.

When you are registered you can choose your own time interval to participate in a round, anywhere between Friday March $17^{\text {th }} 12: 00$ CET (noon) and Monday March $20^{\text {th }} 11: 59$ CET (noon). Solutions submitted after closing won't be taken into account for the results. Be aware that a round runs for 60 minutes exactly, and can't be paused. Make sure that you choose a time interval in which you can solve the puzzles undisturbedly.

When you decide to start a qualification you go to the page "participate", in the menu on the right side of the championships' website. On that page you'll find a description of the next steps, that are also shortly explained below. Firstly you'll find here the booklets with the actual qualification puzzles. These are in a pdf-format, secured with a password. Make sure you have installed a program in which you can open and print a pdf file (e.g. Acrobat Reader).
As soon as you press the button "start puzzle qualification" or "start sudoku qualification", your 60 minutes begin to count down. You are directed to the page with the submission form, where you will find your password for the pdf. After these steps, you can print the puzzles and start solving.

Also keep your instruction booklet close at hand. This can be useful for examples of all puzzles and answer keys, and for the puzzle instructions.

## How to submit your solutions?

On the "submit" page you will find the timer (at the bottom of the page) that counts down the 60 minutes, and you can fill in the answer codes for each solved puzzle. You submit your answers by pressing the "submit" button. This button is located both above as well as below the answer form; it doesn't matter which of the two buttons you press.
You can submit your answers as often as you like during the 60 minutes and you can also correct your previous answers. The system keeps the last answers that you submit so you don't need to fill in answers again. The last submitted answer form is the one that counts, even if you have corrected a right answer into a wrong one. The system doesn't accept answers once the 60 minutes have passed. So keep an eye on the remaining time.

## Answer form:

Submit


## Timer:

# $00: 07: 30$ <br> hours 

Be aware that changing from English to Dutch during submission (i.e. when you are in the submission page) will delete all your previous data. Therefore make your decision for your preferred language before you press the start button!

## Answer keys

For each puzzle and sudoku you will need to submit answer keys, that are described further on in this booklet. For many puzzles this implies copying the cell values of two rows in the corresponding cells on the answer form. For some puzzles a certain value for each row need to be submitted.
On the previous page a screenshot is given of a filled in answer form. When you hover your mouse over the question mark a text will appear telling you what kind of code is expected (for example: expected: 10 digits between 0 and 9 ).

## What's at stake

At stake is qualification for the live finals of the Dutch Puzzle and Sudoku Championships 2024.
During the live finals there will be prizes for the top three participants in both categories WCPN and ORTEC. To be crowned Dutch Puzzle Champion or Dutch Sudoku Champion, you need to have the Dutch Nationality, and be a member of the Dutch Puzzle Association WCPN.

Apart from crowning the Dutch Champions, the championships also act as part of the qualification for the World Puzzle and Sudoku Championships 2024, that will be held in Beijing, most likely from Octobre 13 to 20. All participants for the Dutch team in the World Puzzle and Sudoku Championships need to have the Dutch Nationality and be a member of WCPN. Furthermore we need to mention that participation in the World Championships is at your own expense.

## Etiquette

We expect everybody to solve the puzzles individually, without the help of aids like calculators, solvers, etc. and without having contact about the puzzles with other people. In an online tournament we obviously cannot check the participants' behavior. Therefore, in the spirit of good sportsmanship, we expect everybody to participate in a fair, honest way. When we nevertheless detect that someone has cheated, the organization has the right to remove this person from the results.

## Qualification

After the qualification results will be published for each championship. The best participants of the categories WCPN and ORTEC will be invited for the finals, which will be held on Saturday the $13^{\text {th }}$ of April 2024 at ORTEC; the address being: Houtsingel 5, 2719 EA Zoetermeer, the Netherlands.

The total number of participants in the final will be approximately 50 (WCPN and ORTEC combined). The exact ratio and amounts will be determined after the qualifications by the organizing committee. The three best participants in the categories WCPN and ORTEC during the previous Dutch Championships in 2022 will be exempt from qualification, but are of course welcome to take part just for fun (hors concours).

## Qualification result

The qualification result will be determined on the basis of the number of points that a participant has scored during the period of 60 minutes. In case a participant solves all puzzles correctly within the 60 minutes he/she will receive a bonus of 10 points for each full minute that he/she has submitted before the end of the 60 minutes. In case of a draw, the participant that has sent in his or her results in the shorter amount of time, wins over someone that needed more time. The time of receival, noted upon your solution form is binding.

## Printing of puzzles

The puzzles can be downloaded from the "participate" page. The pdf's are secured with a password, that you will receive after you press the "start puzzle/sudoku qualification" button. You are directed to the submission page, where you will find your password. Your time will already start at that moment.
You need to print the puzzles yourself. Be sure your printer is on and ready to print. (Hint: start solving directly after printing the first page or solve the puzzles digitally if you have a suitable device!).

## Questions

If you have any questions or remarks about (the qualification for) the Dutch Puzzle and Sudoku Championship 2024, or about the contents of this Instruction Booklet and/or the puzzles/sudokus it contains, you can sent an email to: wcpn.pzzl@gmail.com.

For each Sudoku a key needs to be submitted in the answer form for two solved rows. In the puzzle booklets, the corresponding rows are indicated by an orange arrow.

For sudokus this implies transfering de digits of all cells in de indicated rows:
Soduku

| 1 | 3 | 4 | 8 | 6 | 9 | 7 | 2 | 5 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | 4 | 7 | 1 | 5 | 3 | 8 | 9 | 6 |

row 4
row 8For each Puzzle a key needs to be submitted in the answer form for either two solved rows (in which case these rows are indicated by an orange arrow), or for the whole grid (in which case it is indicated that you should consider each row).

Below it is explained how the answer key of each puzzle needs to be composed. It makes no difference whether letters are capitalized or not.

Be aware: The given row numbers are correct but the values are fictional!!!

1. Four winds

| V | V | V | H | x | V | H | H | x | H |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| H | V | x | H | V | V | x | H | H | H |

row 1
row 5

- indicate for each cell in the indicated rows whether the cell contains a horizontal (H) or vertical (V) line.
- use "x" for a clue cell.

2. Easy as ABC

| $A$ | $X$ | $B$ | $X$ | $C$ | $D$ | $E$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $X$ | $A$ | $C$ | $D$ | $X$ | $E$ | $B$ |

- give the letters of all the cells in the indicated rows.
- use " $x$ " for an empty cell.

3. Kuromasu

| B | B | W | W | W | B | B | B | W |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| W | B | B | W | B | W | W | W | B |  |

- indicate for each cell in the indicated rows whether the cell is black (B for BLACK) or white (W for WHITE).

4. Battle ships

| 3 | 3 | 0 | 6 | 1 | 4 | 0 | 0 | 2 | 7 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

- indicate for each row in which column you will find the first ship segment.
- pay attention: when there is no ship segment in a row, put down a "0" (zero).

5. Pentapa

| B | B | W | W | W | B | B | B | W | W |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| W | B | B | W | B | W | W | W | B | B |

- indicate for each cell in the indicated rows whether the cell is black (B for BLACK) or white (W for WHITE).

6. Skyscrapers

| 6 | 2 | 1 | 4 | 3 | 5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | 5 | 3 | 1 | 4 | 6 |

row 4

- give the digits of all the cells in the indicated rows.

7. Star battle

| 0 | 2 | 8 |
| :--- | :--- | :--- |
| 3 | 6 | 1 |

row 1
row 9

- Indicate for the indicated rows the number of cells before the first star, in between both stars, and behind the last star. Hence, each answer key consists of three digits.

8. Aquapelago

| $B$ | $W$ | $B$ | $W$ | $B$ | $W$ | $B$ | $W$ | $W$ | $B$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $W$ | $B$ | $W$ | $W$ | $B$ | $W$ | $W$ | $W$ | $B$ | $W$ |

- indicate for each cell in the indicated rows whether the cell is black (B for BLACK) or white (W for WHITE).
- use " $x$ " for a clue cell.

9. Fillomino

| 7 | 3 | 2 | 9 | 9 | 7 | 3 | 5 | 5 | 8 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 3 | 3 | 9 | 6 | 6 | 2 | 4 | 4 | 8 |

- For all the cells in the indicated rows give the digit that belongs to the corresponding region.

10. Rail pool

| 6 |
| :---: |
| 10 |

row 2
row 6

- give the number of cells in which the loop makes a $90^{\circ}$ angle in the indicated rows.

11. Nemo

| 1 | $x$ | 3 | 5 | $x$ | $x$ | 2 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4 | 2 | 5 | $x$ | 3 | $x$ | $x$ | 1 |

row 1
row 5

- give the digits of all the cells in the indicated rows.
- use " $x$ " for an empty cell.

12. Choco banana

| $B$ | $W$ | $W$ | $B$ | $W$ | $W$ | $B$ | $W$ | $W$ | $B$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $W$ | $B$ | $B$ | $B$ | $W$ | $W$ | $W$ | $W$ | $B$ | $W$ |

indicate for each cell in the indicated rows whether the cell is black (B for BLACK) or white (W for WHITE).

Draw one or more horizontally or vertically travelling straight lines from each numbered cell, such that all empty cells contain exactly one line segment. Each number indicates how many cells are covered by the lines that start from this cell, excluding the clue cell itself.


$$
\begin{array}{|l|l|l|l|l|l|l|l|l|l|l|l|}
\hline \mathrm{V} & \mathrm{~V} & \mathrm{~V} & \mathrm{H} & \mathrm{x} & \mathrm{~V} & \mathrm{H} & \mathrm{H} & \mathrm{x} & \mathrm{H} & \mathrm{H} & \mathrm{~V} \\
\hline
\end{array}
$$

indicate for each cell in the indicated rows whether the cell contains a horizontal (H) or vertical (V) line. use " $x$ " for a clue cell.

## EASY AS ABC

Puzzle 2; 29 POINTS

Place the letters A-E exactly once in each row and column. Some cells remain empty. Clues outside the grid indicate the first letter in that row or column that you come across from that direction


give the letters of all the cells in the indicated rows. use " $x$ " for an empty cell

Shade some cells, that can touch each other only diagonally, such that the remaining white cells form a single group of connected cells. Clues remain white and indicate how many cells can be seen -horizontally and vertically- from that cell, including the cell itself.



$$
\begin{array}{|l|l|l|l|l|l|l|l|l|l}
\hline \mathrm{W} & \mathrm{~B} & \mathrm{~W} & \mathrm{~W} & \mathrm{~B} & \mathrm{~W} & \mathrm{~W} & \mathrm{~W} & \mathrm{~W} & \mathrm{~B} \\
\hline
\end{array}
$$

indicate for each cell in the indicated rows whether the cell is black ( $B$ for BLACK) or white ( $W$ for WHITE).

## BATTLE SHIPS

## PuzzLe 4; 32 POINTS

Place the given fleet in the grid, such that every ship segment fills a single cell. Ships are placed horizontally or vertically, but do not touch each other, not even diagonally. Cells with water remain empty. Clues outside the grid indicate how many cells in the corresponding row or column are occupied by ship segments.


## Pentapa

Shade some cells such that all shaded cells form a single wall of orthogonally connected cells, where no $2 \times 2$ area is fully shaded. The wall consists entirely of exactly one time the given set of pentominos (all but the " $P^{\prime \prime}$ ), which may be rotated and/or mirrored. Clue cells remain white and indicate the length of the wall in the eight surrounding cells. When a clue cell contains more than one clue, the different wall segments must be seperated by at least one white cell.

penpa-link: http://tinyurl.com/2axu3nfv

indicate for each cell in the indicated rows whether the cell is black ( $B$ for BLACK) or white (W for WHITE).

## SKYSCRAPERS

Puzzle 6; 45 POINTS
Place the digits 1-6 exactly once in each row and column. Each digit represents a skyscraper of the corresponding height. Clues outside the grid indicate how many buildings can be seen from that direction, where higher buildings block the view of lower buildings.



## STAR BATTLE

Place two stars with the size of one cell in each row, column and bold outlined region. Stars may not touch each other, not even diagonally.


$$
\rightarrow \begin{array}{|l|l|l|}
\hline 5 & 1 & 2 \\
\hline
\end{array}
$$

Indicate for the indicated rows the number of cells before the first star, in between both stars, and behind the last star. Hence, each answer key consists of three digits.

## AQUAPELAGO

PuZzLE 8; 52 POINTS
Shade some cells, that can touch each other only diagonally, such that all remaining white cells create a single group of connected cells, but no $\mathbf{2 x 2}$ area remains fully white. Clue cells are shaded and indicate the number of cells that belong to the corresponding group of diagonally connected shaded cells.

penpa-link: http://tinyurl.com/2d3ep8d4


$$
\begin{array}{|l|l|l|l|l|l|l|l|l|l|}
\hline \mathrm{B} & \mathrm{~W} & \mathrm{~B} & \mathrm{~W} & \mathrm{~B} & \mathrm{~W} & \mathrm{~B} & \mathrm{~W} & \mathrm{~W} & \mathrm{~B} \\
\hline
\end{array}
$$

indicate for each cell in the indicated rows whether the cell is black (B for BLACK) or white (W for WHITE).
use " $x$ " for a clue cell.

## Fillomino

Divide the grid into regions of horizontally and/or vertically connected cells, by drawing their borders.
Regions containing the same number of cells can touch each other only at the corners. A digit indicates the number of cells within that region. A region may contain none, one, or multiple clues.


| 7 | 3 | 2 | 9 | 9 | 7 | 3 | 5 | 5 | 8 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

For all the cells in the indicated rows give the digit that belongs to the corresponding region.

## RAIL POOL

Puzzle 10; 62 Points
Draw a single closed loop through all cells in the grid by connecting the centers of adjacent cells. The loop doesn't cross or overlap itself. Clues indicate all the different lengths of straight line segments that are (possibly partially) traveling through the corresponding outlined region, and each given length should be represented by at least one line segment.


## Nemo

Puzzle 11; 65 POINTS
Place the digits 1-5 exactly once in each row and column. Some cells remain empty. Digits in cells with arrows indicate the distance (in steps) to the first empty cell in the direction of the arrow. Each cell with an arrow must contain a digit.

penpa-link: http://tinyurl.com/2d7vk9xx


$$
\begin{array}{|l|l|l|l|l|l|l|l|}
\hline 1 & x & 3 & 5 & x & x & 2 & 4 \\
\hline
\end{array}
$$

give the digits of all the cells in the indicated rows. use " $x$ " for an empty cell.

## Choco banana

PuzzLE 12; 110 POINTS
Shade some cells such that each shaded region has a rectangular or square shape, and each unshaded region does not have a rectangular or square shape. Clues inside the grid indicate the number of either shaded or unshaded cells in the corresponding region. A region may contain none, one, or multiple clues, and clues may also be shaded.


Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block.


## Sudoku - CLONE

Puzzle 4; 38 POINTS
Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. Digits in the same position in identical shaded shapes (without rotating or mirroring) are the same.


$\Rightarrow$| 4 | 3 | 8 | 7 | 6 | 1 | 5 | 9 | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 5 | 9 | 2 | 4 | 8 | 3 | 6 | 7 | 1 |
| 7 | 1 | 6 | 5 | 9 | 2 | 3 | 8 | 4 |
| 8 | 5 | 1 | 3 | 7 | 9 | 2 | 4 | 6 |
| 6 | 4 | 3 | 2 | 1 | 8 | 7 | 5 | 9 |
| 2 | 7 | 9 | 6 | 4 | 5 | 1 | 3 | 8 |
| 9 | 6 | 7 | 1 | 5 | 4 | 8 | 2 | 3 |
| 1 | 2 | 4 | 8 | 3 | 7 | 9 | 6 | 5 |
| 3 | 8 | 5 | 9 | 2 | 6 | 4 | 1 | 7 |



Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. No two adjacent cells contain consecutive digits.

| 5 |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  | 8 |  |  |
|  |  | 7 | 4 |  |  |  | 1 |  |
|  |  | 3 | 8 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 7 | 2 |  |  |
| 4 |  |  |  | 5 | 7 |  |  |  |
|  |  | 6 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 3 |



## Sudoku - Palindrome

Puzzle 6; 51 POINTS
Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. The digits on the grey lines form palindromic sequences.


Apply classic sudoku rules. The digits outside the grid have to be placed in mirrored position in the first three cells from the left and from the right (if one digit is in the second cell from the left, the other digit has to be in the second cell from the right). Digits outside the grid are written in ascending order.


| 1 | 4 | 7 | 1 | 2 | 3 | 9 | 5 | 8 | 4 | 6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | 6 | 4 | 9 | 6 | 7 | 8 | 1 | 2 | 5 | 3 |
| 3 | 7 | 3 | 8 | 5 | 4 | 2 | 6 | 1 | 9 | 7 |
|  |  |  | 6 | 3 | 8 | 5 | 4 | 7 | 9 | 1 |
| 6 | 9 | 1 | 5 | 9 | 2 | 3 | 8 | 6 | 7 | 4 |
| 4 | 5 | 2 | 7 | 4 | 1 | 6 | 9 | 5 | 3 | 8 |
|  | 9 | 9 | 5 | 2 | 7 | 8 | 1 | 4 | 3 | 6 |
| 2 | 6 | 8 | 6 | 1 | 9 | 7 | 3 | 4 | 2 | 5 |
| 4 | 8 | 9 | 4 | 3 | 6 | 5 | 2 | 7 | 8 | 1 |
|  |  |  |  |  |  |  |  |  |  |  |

$$
\Rightarrow \begin{array}{|l|l|l|l|l|l|l|l|l|}
\hline 6 & 3 & 8 & 5 & 4 & 7 & 9 & 1 & 2 \\
\hline
\end{array}
$$

penpa-link: http://tinyurl.com/ytpa7nro

## SUDOKU - X-SOMMEN

Puzzle 8; 61 POINTS
Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. Clues outside the grid indicate the sum of the first X digits in the corresponding direction. X is the first digit in the corresponding direction.



penpa-link: http://tinyurl.com/yru941pt

Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. Clues outside the grid indicate the sum of the digits that have to be placed between the digit 1 and the digit 9 in that row or column.

penpa-link: http://tinyurl.com/ytlzt2a4


## Puzzle 10; 81 Points

Place the digits 1-9 exactly once in each row, column and $3 \times 3$ block. The two digits in each cage (dotted outlined region) represent a two digit number, such that the clue (the small number in the upper left corner of each cage) indicates the result when the two digit number is rounded off to the closest multiple of 10 (where last digits 1-4 result in rounding down, and 5-9 result in rounding up).


penpa-link: http://tinyurl.com/29w6ledh




