## A1. Classic Sudoku



## A2. Diagonal

Digits don't repeat across main diagonals.



## A3. Consecutive

If difference between two adjacent digits is 1, a dot will be marked between them. Converse rule applies.



## A4. Knight Step

If two identical digits are at Knight-step away, a line will be drawn between the corresponding cells. Converse rule applies.



## A5. Wheel

The 4 digits on each "wheel" must be placed on those 4 cells, in the given order. The "wheel" may be rotated by $0^0$ / $90^0$ / $180^0$ / $270^0$.



## A6. XV

If sum of two adjacent digits is 5 or 10, a symbol V or X will be marked. Converse rule applies.



### Solution grids

**A1**

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

**A2**

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

**A3**

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

**A4**

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

**A5**

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

**A6**

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

## A7. Difference

The digit given between two cells is the difference between the digits in the corresponding cells.

## A8. Toroidal

Each row, column, outlined regions contain 1 through 6 exactly once. Some outlined regions wrap around the grid.

## A9. Quad Max Min

The arrow at the corner points to a digit that is either greater than or the less than other 3 digits.

## A10. Extra Region

Each extra region must contain digits from 1-6. The extra regions are of 6 cells each and are shaded with different colors in the grid

## A11. Glasses

The center of each glass is the difference of the outer two digits.

## A12. Kropki

If two adjacent cells are consecutive, a white dot is marked. If one is double of another, a black dot is marked. Dot between 1 and 2 can be of any color. Converse rule applies.

## B1. Classic Sudoku

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

## B2. Diagonal Consecutive

All diagonally adjacent cells having consecutive digits are marked by a line. Converse rule applies.

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 2 |   |   |   |   | 1 |
|   |   |   |   |   |   |
|   |   |   |   |   |   |
|   |   |   |   |   |   |
|   |   |   |   |   |   |
| 3 |   |   |   |   | 6 |

## B3. Touchy

Each digit touches, vertically or horizontally at least one consecutive digit.

| 5 |   |   |   |   |   |
|---|---|---|---|---|---|
|   |   |   |   |   |   |
|   |   |   | 5 | 1 |   |
|   |   |   | 4 | 2 |   |
|   |   |   |   |   |   |
|   |   |   |   |   | 6 |

## B4. Incomplete Arrow

The number in a circle is the sum of the first 'n' digits along its arrow where 'n' is less than or equal to the length of the arrow.

## B5. Skyscrapers

Digits inside the grid represent height of skyscrapers. Digits outside the grid represent number of skyscrapers that can be seen from that direction. Taller ones hide shorter ones.

## B6. Killer

The clue given in each cage must equal the sum of the digits inside the cage. Digits don't repeat in a cage.

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### Solutions

**B1**

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

**B2**

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

**B3**

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

**B4**

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

**B5**

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

**B6**

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

### B4 grid (given)

|   |   |   |   |   | 6 |
|---|---|---|---|---|---|
| ◯ |   | ◯ |   | 5 |   |
|   |   | 4 |   |   |   |
|   | 3 |   | ◯ |   |   |
|   | 2 |   |   |   |   |
| 1 |   |   | ← |   | ◯ |

### B5 grid (clues)

Top: 1 3 2 2 2 5
Left: 1 3 4 2 3 4
Right: 3 2 2 3 2 1
Bottom: 4 3 2 3 3 1

### B6 grid (given cages)

Cage clues: 6, 5, 8, 6, 5, 7, 9, 5

## B7. Point To Next

If digit "n" is placed in a cell with arrow, digit "n+1" must be placed in the direction shown by arrow.

## B8. Irregular

## B9. Symmetric Unequal

Cells that are 180° symmetric to each other cannot have identical digits.

## E1. Copy

Each labeled area has a twin in which digits occur in exactly the same position.

## E2. Renban

Cells connected with a gray line must contain distinct consecutive digits.

## E3. 4 In a Row

The straight line passing through 4 cells contain the same digits in same order. However, the directions could be different.

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

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

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

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

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

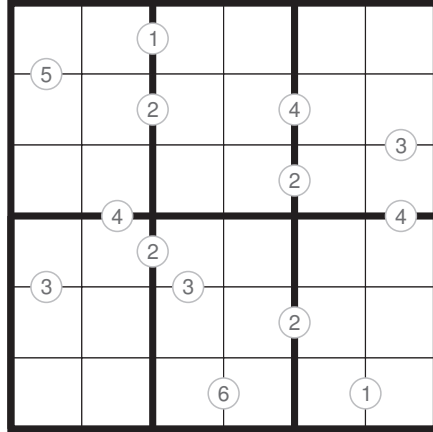| 5 | 3 | 6 | 1 | 4 | 2 |
|---|---|---|---|---|---|
| 1 | 2 | 4 | 3 | 5 | 6 |
| 3 | 4 | 1 | 2 | 6 | 5 |
| 2 | 6 | 5 | 4 | 1 | 3 |
| 6 | 1 | 3 | 5 | 2 | 4 |
| 4 | 5 | 2 | 6 | 3 | 1 |

## E4. Thermo

The digits in the thermometer shapes must be strictly increasing in each cell from the round bulb to the flat end
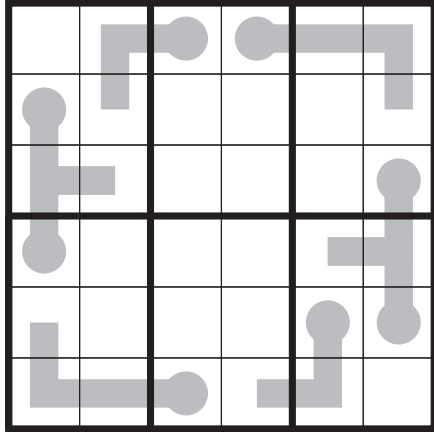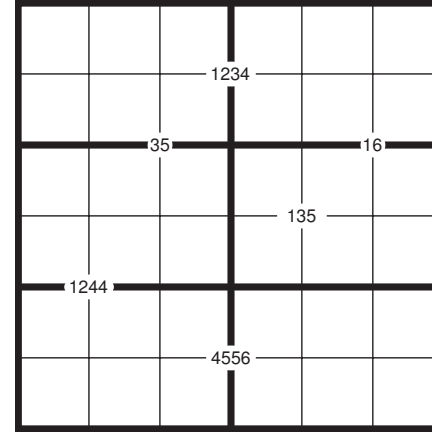


## E5. Either Or

A digit between 2 cells must appear in one of those 2 cells.



## E6. Corner

The digits given at the corner must appear in the 4 adjoining cells. If any digit is given twice, it must appear twice.
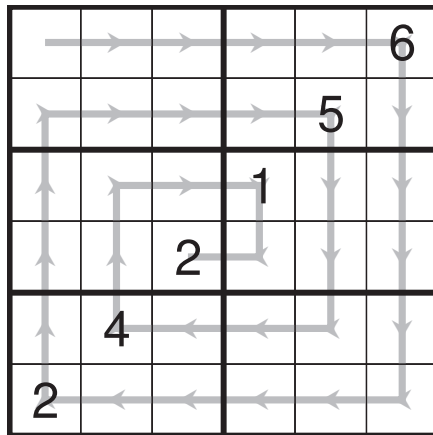


## E7. Kid

The clues have been provided by a kid who cannot add beyond 6. Each digit in the clue indicates the sums of (one or more) continuous numbers from left to right for the row, with the additional constraint that no sum can exceed 6.



## E8. Snail

Along the path of the snail, no 2 digits can be consecutive.



## E9. Descriptive Pair

Each pair of digits A and B on the outside means that at least one of the following are true in the row/column:
1) digit A is at the $B^{th}$ cell from the edge. 2) digit B is at the $A^{th}$ cell from the edge.



### Solution grids (right column)

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

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

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

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

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

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

### E5 Either Or clue circles
5, 1, 2, 4, 3, 2, 4, 4, 2, 3, 3, 2, 6, 1

### E6 Corner clues
1234, 35, 16, 135, 1244, 4556

### E7 Kid row clues
6555, 5565, 6546, 36453, 5664, 6663

### E8 Snail path numbers
6, 5, 1, 2, 4, 2

### E9 Descriptive Pair clues
Top: 4/5, 1/2, 2/5, 3/4, 3/4, 1/5
Left: 12, 34, 56, 14, 25, 36