Total Time - 90 minutes
Start Time - 14:30 IST, $14^{\text {th }}$ Feb 2010

| Type | Points |
| :---: | :--- |
| Equal Product | 70 |
| Symbol | 75 |
| Snail | 80 |
| 4 In a Row | 85 |
| Sum Line | 90 |
| Mini Diagonal | 110 |
| Find X! | 115 |
| Odd Or Even Count | 120 |
| Touchy | 125 |
| Symmetric Unequal | 130 |
| Total | $\mathbf{1 0 0 0}$ |

## Please note

- Answers will be accepted only using the website. Please familiarize yourself with solving and submitting the examples.
- Answers will not be accepted after the stipulated period.
- Time bonus (5 points per minute saved) will be awarded only if all Sudokus are solved correctly.
- Examples don't reflect the difficulty of the Sudokus in the test.
- In all Sudokus, standard rule "Every column, every row and every 3X3 box must have digits from 1 through 9" apply.
- If you are solving on paper, you don't need to enter all the $\mathbf{8 1}$ digits. Click on "Show Cells to Fill". Enter the "marked cells". Note "Show cells to Fill" will be activated 45 minutes after the test starts.


## Equal Product Sudoku

A cross at a corner marks group of 4 cells in which two pairs of diagonally opposite digits multiply to same product.


| 1 | 2 | 8 | 3 | 5 | 6 | 4 | 9 | 7 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $3^{*}$ | 6 | 4 | 7 | 9 | 1 | 8 | 5 | 2 |
| 5 | 9 | 7 | 8 | 2 | 4 | 1 | 3 | 6 |
| 7 | 5 | 6 | 9 | 4 | 8 | 2 | 1 | 3 |
| 8 | 4 | 3 | 2 | 1 | 5 | 7 | 6 | 9 |
| $2^{2}$ | 1 | 9 | 6 | 3 | 7 | 5 | 8 | 4 |
| 6 | 7 | 5 | 4 | 8 | 9 | 3 | 2 | 1 |
| 9 | 3 | 1 | 5 | 7 | 2 | 6 | 4 | 8 |
| 4 | 8 | 2 | 1 | 6 | 3 | 9 | 7 | 5 |

## Symbol Sudoku

There are some symbols that touch either 2 or 4 cells; the same digits must appear in the cells touched by a symbol each time that symbol occurs, but the digits can appear in any order.

For example, please check http://motris.livejournal.com/96657.html

## Snail Sudoku

Along the path of the snail, no two consecutive cells can have consecutive digits.

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


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

## 4 In a Row

The straight line passing through 4 cells (horizontally / vertically / diagonally) contain the same digits in same order. However, the directions could be different. [ The example does not have any diagonal line.]

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


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

## Sum Line

There are some marked lines passing through 3 cells. In every line, one cell is the sum of other two cells. [ Please be careful about the two lines sharing the same cell, e.g. D1 in the example below.]

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

Mini Diagonal Sudoku
All the marked mini diagonals must have distinct digits.

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


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

Find $X$ !

There is always a circle between two cells, where either the sum or the difference is $X$.


Odd Or Even Count
Some cells are shaded. If a shaded cell is Odd, it represents the number of Odd neighbors (horizontal / vertical / diagonal) of that cell. If the shaded cell is Even, it represents the number of Even neighbors.

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


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

## Touchy

Each digit touches, vertically or horizontally, at least one consecutive digit. E.g, every 3 touches at least a cell containing 2 or 4.

|  |  | 4 |  |  | 2 |  |  |  | 1 | 3 | 3 | 4 | 7 | 76 | 6 | 9 | 2 | 5 |  | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 5 | 8 |  |  |  |  | 2 |  | 7 | 6 | 5 | 3 | 3 | 8 | 1 | 4 |  | 9 |
| 5 |  | 9 |  |  | 7 |  |  | 6 | 5 |  | 8 | 9 | 1 |  | 2 | 4 | 7 | 3 |  | 6 |
|  | 2 |  |  |  |  | 7 |  |  | 4 | 2 | 2 | 1 | 9 |  | 8 | 3 | 6 | 7 |  | 5 |
|  |  |  |  |  |  |  |  |  | 3 | 5 | 5 | 7 | 2 |  | 1 | 6 | 8 | 9 |  | 4 |
|  | 6 |  |  |  |  | 2 |  |  | 9 | 6 | 6 | 8 | 4 | 5 | 5 | 7 | 3 | 2 |  | 1 |
| 8 |  | 5 |  |  | 4 |  |  | 3 | 8 | 9 | 9 | 5 | 6 | 7 | 7 | 2 | 4 | 1 |  |  |
|  |  |  | 8 | 1 |  |  |  |  | 7 | 4 | 4 | 3 | 8 | 9 | 9 | 1 | 5 | 6 |  |  |
|  |  | 2 |  |  | 9 |  |  |  | 6 |  | 1 | 2 | 3 | 4 | 4 | 5 | 9 | 8 |  | 7 |

Symmetric Unequal
Cells that are $180^{\circ}$ symmetric to each other can't have same digits. [e.g. when rotated $180^{\circ} \mathrm{C} 3$ becomes $\mathrm{G} 7, \mathrm{~F} 1$ becomes D9]

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


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

