

## Puzzles



Paint By Fractions
90 points

X Sudoku
120 points

## Part IV

"The weakest link"
Puzzle 1
Points 90

## Paint By Fractions

This is a standard Paint By Numbers, except that some cells can count for half. To color half a cell, draw a diagonal line from one corner to the other, then shade in one of the two resulting isosceles triangles. Any edge with white on one side and black on the other is considered to break up a string of black cells.


## Part IV

"The weakest link"
Puzzle 2
Points 120

## X Sudoku

Place the digits 1 through 9 into the empty squares (one per square) so that, in each of the five $9 x 9$ squares, each digit appears exactly once in each of the following twentyseven regions: the nine rows, the nine columns and the nine outlined $3 \times 3$ squares. Some digits are given.

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

