5. Max-out

Program Name: Max.java Input File: max.dat

Max-out is a game that is played on a board consisting of a 6x6 matrix of squares and with an unlimited number of discs. In each square, there is a positive two digit random integer. A sample Max-out board is displayed to the right.

78	78	11	**55**	20	11
98	54	81	43	39	**97**
12	15	79	**99**	58	10
13	**79**	83	65	34	**17**
85	59	61	12	58	97
40	**63**	97	**85**	66	**90**

The object of the game is to cover with a single disc the integer in as many squares as you wish so that the sum of all of the integers covered is as large as possible while abiding by the following rules:

- A single disc can cover exactly one square.
- An individual square can be covered by at most one disc.
- No disc can be placed in a square adjacent to a square containing a disc.
- Squares are considered adjacent only if they touch horizontally, vertically or diagonally.

You are to write a program that will determine the placement of discs to maximize the sum of the integers covered. On the board above, the shaded squares are the squares on which a disc was placed to obtain the maximum score of 683.

Input

The first line of input will contain a single integer `n` that indicates the number of games to follow. Each of the following games will consist of 6 lines with six two-digit integers on each line. The integers on each line will be separated by a space.

Output

For each game and on a separate line, you will print the largest sum possible when covering the integers with discs as outlined by the rules above.

Example Input File

```
1
78 78 11 55 20 11
98 54 81 43 39 97
12 15 79 99 58 10
13 79 83 65 34 17
85 59 61 12 58 97
40 63 97 85 66 90
```

Example Output to Screen

```
683
```