

American Computer Science League

2023-2024 • Contest 1: ACSL Tiles • Junior Division

PROBLEM: ACSL Tiles is a one-person game played with rectangular tiles. Each tile has a single-digit number between 1 and 9 inclusive at each end. At the start of the game, there are 4 rows, each with a number. The goal of the game is to build rows by placing a tile at the right end of the topmost row whose last number matches a number on the tile. Tiles can be re-oriented; thus, the tiles 34 and 43 are the same tile. If a tile cannot be placed on any row, it is placed in the *discard pile*. When all tiles have been played or discarded, find the sum of the single-digit numbers on all of the tiles in the *discard pile*.

EXAMPLE:

Input:

5923

56 85 27 73 14 34 62

Output:

18

Explanation:

The game starts with 4 rows having numbers 5, 9, 2, 3.

Row 1:	5
Row 2:	9
Row 3:	2
Row 4:	3

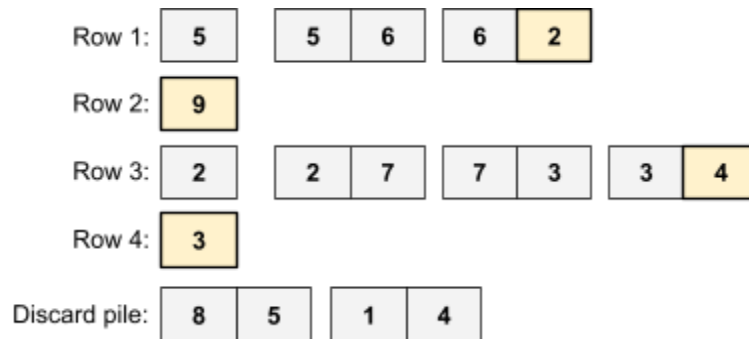
After tile 56 is placed in Row 1, tile 85 is placed in the discard pile. Both 27 and 73 are placed in Row 3 and tile 14 is placed in the discard pile.

Row 1:	5	5	6		
Row 2:	9				
Row 3:	2	2	7	7	3
Row 4:	3				
Discard pile:	8	5	1	4	

The next tile, 34, is placed in Row 3, the topmost row it can go on. And finally, the 26 tile is added to Row 1, with the orientation of 62. The result is as follows:

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The result is the sum of $8+5+1+4=18$.

INPUT: Input a 4-digit integer that gives the initial numbers from Row 1 to Row 4, and a string of no more than fifty 2-digit integers, each separated by a single space. Each 2-digit integer represents the two numbers on each tile, both between 1 and 9, inclusive.

OUTPUT: After placing the tiles using the rules above, output the sum of the single-digit numbers on all of the tiles in the discard pile.

SAMPLE INPUT:

1. 5923
56 85 27 73 14 34 62
2. 8423
74 92 57 93 26 87 14 63 82 54 12
3. 1253
51 81 35 84 95 26 59 13 71 35 46 28
4. 2694
69 76 41 89 16 78 64 36 12 95 52
5. 6479
58 73 92 54 75 35 78 25 81 24 16 95 36 82 14 27 43 13 51

SAMPLE OUTPUT:

1. 18
2. 26
3. 31
4. 22
5. 45

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TEST DATA

TEST INPUT:

```
1. 3972
   18 17 65 61 37 51 57 38 72 92 54 59 43 41 31 28
2. 9146
   95 74 51 19 75 26 32 39 35 31 25 73
3. 7918
   63 18 56 98 48 52 26 92 83 13 17 58 91 67 58
4. 9758
   52 14 51 27 77 62 76 82 96 56 46 49 87
5. 7169
   71 56 15 65 98 71 89 71 11 55 77 17 66 51
```

TEST OUTPUT:

```
1. 56
2. 0
3. 59
4. 48
5. 14
```