

Forming a Magic Square



We define a **magic square** to be an $n \times n$ matrix of distinct positive integers from 1 to n^2 where the sum of any row, column, or diagonal (of length n) is always equal to the same number (i.e., the *magic constant*).

Consider a 3×3 matrix, s , of integers in the inclusive range $[1, 9]$. We can convert any digit, a , to any other digit, b , in the range $[1, 9]$ at cost $|a - b|$.

Given s , convert it into a magic square at *minimal* cost by changing zero or more of its digits. Then print this cost on a new line.

Note: The resulting magic square must contain distinct integers in the inclusive range $[1, 9]$.

Input Format

There are **3** lines of input. Each line describes a row of the matrix in the form of **3** space-separated integers denoting the respective first, second, and third elements of that row.

Constraints

- All integers in s are in the inclusive range $[1, 9]$.

Output Format

Print an integer denoting the minimum cost of turning matrix s into a magic square.

Sample Input

```
4 9 2
3 5 7
8 1 5
```

Sample Output

```
1
```

Explanation

Matrix s initially looks like this:

```
4 9 2
3 5 7
8 1 5
```

Observe that it's not yet magic, because not all rows, columns, and center diagonals sum to the same number.

If we change the bottom right value, $s[2][2]$, from **5** to **6** at a cost of $|6 - 5| = 1$, s becomes a magic square at the minimum possible cost. Thus, we print the cost, **1**, on a new line.