A password locker with N digits, each digit can be rotated to 0-9 circularly.

You can rotate 1-3 consecutive digits up or down in one step.

For examples:

$567890 \rightarrow 567901$ (by rotating the last 3 digits up)

$000000 \rightarrow 000900$ (by rotating the 4th digit down)

Given the current state and the secret password, what is the minimum amount of steps you have to rotate the locker in order to get from current state to the secret password?

Input

Multiple (less than 50) cases, process to EOF.

For each case, two strings with equal length (≤ 1000) consists of only digits are given, representing the current state and the secret password, respectively.

Output

For each case, output one integer, the minimum amount of steps from the current state to the secret password.

Sample Input

```
111111 222222
896521 183995
```

Sample Output

```
2
12
```