

In chess, each move of a knight consists of moving by two squares horizontally and one square vertically, or by one square horizontally and two squares vertically. A knight making one move from location  $(0,0)$  of an infinite chess board would end up at one of the following eight locations:  $(1,2)$ ,  $(-1,2)$ ,  $(1,-2)$ ,  $(-1,-2)$ ,  $(2,1)$ ,  $(-2,1)$ ,  $(2,-1)$ ,  $(-2,-1)$ .

Starting from location  $(0,0)$ , what is the minimum number of moves required for a knight to get to some other arbitrary location  $(x,y)$ ?

## Input

Each line of input contains two integers  $x$  and  $y$ , each with absolute value at most one billion. The integers designate a location  $(x,y)$  on the infinite chess board. The final line contains the word 'END'.

## Output

For each location in the input, output a line containing one integer, the minimum number of moves required for a knight to move from  $(0,0)$  to  $(x,y)$ .

## Sample Input

```
1 2
2 4
END
```

## Sample Output

```
1
2
```

