

# Problem K. Road To Zero

**Time limit** 1000 ms

**Mem limit** 262144 kB

You are given two integers  $x$  and  $y$ . You can perform two types of operations:

1. Pay  $a$  dollars and increase or decrease any of these integers by 1. For example, if  $x = 0$  and  $y = 7$  there are four possible outcomes after this operation:
  - $x = 0, y = 6$ ;
  - $x = 0, y = 8$ ;
  - $x = -1, y = 7$ ;
  - $x = 1, y = 7$ .
2. Pay  $b$  dollars and increase or decrease both integers by 1. For example, if  $x = 0$  and  $y = 7$  there are two possible outcomes after this operation:
  - $x = -1, y = 6$ ;
  - $x = 1, y = 8$ .

Your goal is to make both given integers equal zero simultaneously, i.e.  $x = y = 0$ . There are no other requirements. In particular, it is possible to move from  $x = 1, y = 0$  to  $x = y = 0$ .

Calculate the minimum amount of dollars you have to spend on it.

## Input

The first line contains one integer  $t$  ( $1 \leq t \leq 100$ ) — the number of testcases.

The first line of each test case contains two integers  $x$  and  $y$  ( $0 \leq x, y \leq 10^9$ ).

The second line of each test case contains two integers  $a$  and  $b$  ( $1 \leq a, b \leq 10^9$ ).

## Output

For each test case print one integer — the minimum amount of dollars you have to spend.

## Sample 1

Input	Output
2 1 3 391 555 0 0 9 4	1337 0

## Note

In the first test case you can perform the following sequence of operations: first, second, first. This way you spend  $391 + 555 + 391 = 1337$  dollars.

In the second test case both integers are equal to zero initially, so you don't have to spend money.