

A. Road To Zero

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

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.

Example

| input |
|-----------------------------------|
| 2 1 3 391 555 0 0 9 4 |
| output |
| 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.