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 ($1 \le t \le 100$) — the number of testcases.

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

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

Output

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

Example

input Copy

```
2
1 3
391 555
0 0
9 4
```

output Copy

```
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 dont' have to spend money.

Educational Codeforces Round 86 (Rated for Div. 2)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Problem tags**

greedy math *1000

No tag edit access

→ **Contest materials**

- Announcement (en)
- Tutorial (en)