



HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

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:

$$egin{array}{ll} \circ x = 0, y = 6; \\ \circ x = 0, y = 8; \\ \circ x = -1, y = 7; \\ \circ x = 1, y = 7. \end{array}$$

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.

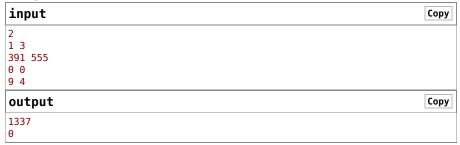
The first line of each test case contains two integers x and y ($0 \le x, y \le 10^9$).

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



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

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Start virtual contest

→ Problem tags

greedy	math	*1000	No tag edit access

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→ Contest materials

- Announcement (en)
- Tutorial (en)

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