

Round 1 AN

1. Choose wisely

There are two problems in a contest.

Problem A is worth 500 points at the start of the contest.

Problem B is worth 1000 points at the start of the contest.

Once the contest starts, after each minute:

Maximum points of Problem A reduce by 2 points .

Maximum points of Problem B reduce by 4 points.

It is known that Professor requires X minutes to solve Problem A correctly and Y minutes to solve Problem B correctly.

Find the maximum number of points Professor can score if he optimally decides the order of attempting both the problems.

Input Format:

First line will contain T, number of test cases. Then the test cases follow.

Each test case contains of a single line of input, two integers X and Y - the time required to solve problems A and B in minutes respectively.

Output Format:

For each test case, output in a single line, the maximum number of points Professor can score if he optimally decides the order of attempting both the problems.

Constraints:

$$1 \leq T \leq 1000$$

$$1 \leq X, Y \leq 100$$

Sample I/O:

Input 1:

```
4
10 20
8 40
15 15
20 10
```

Output 1:

```
1360
1292
1380
1400
```

Explanation:

Test Case 1:

If Professor attempts in the order A→B then he submits Problem A after 10 minutes and Problem B after 30 minutes.

Thus, he gets $500 - 10 \cdot 2 = 480$ points for problem A and $1000 - 30 \cdot 4 = 880$ points for problem B. Thus, total $480 + 880 = 1360$ points for both the problems.

If Professor attempts in the order B→A then he submits Problem B after 20 minutes and Problem A after 30 minutes.

Thus, he gets $1000 - 20 \cdot 4 = 920$ points for Problem B and $500 - 30 \cdot 2 = 440$ points for Problem A. Thus total $920 + 440 = 1360$ points for both the problems.

So, in both cases Professor gets 1360 points in total.





the problems.

If Professor attempts in the order $B \rightarrow A$ then he submits Problem B after 40 minutes and Problem A after 48 minutes. Thus, he gets $1000 - 40 \cdot 4 = 840$ points for Problem B and $500 - 48 \cdot 2 = 404$ points for Problem A. Thus total $840 + 404 = 1244$ points for both the problems.

So, Professor will attempt in the order $A \rightarrow B$ and thus obtain 1292 points.

Test Case 3:

If Professor attempts in the order $A \rightarrow B$ then he submits Problem A after 15 minutes and Problem B after 30 minutes. Thus, he gets $500 - 15 \cdot 2 = 470$ points for problem A and $1000 - 30 \cdot 4 = 880$ points for problem B. Thus, total $470 + 880 = 1350$ points for both the problems.

If Professor attempts in the order $B \rightarrow A$ then he submits Problem B after 15 minutes and Problem A after 30 minutes. Thus, he gets $1000 - 15 \cdot 4 = 940$ points for Problem B and $500 - 30 \cdot 2 = 440$ points for Problem A. Thus total $940 + 440 = 1380$ points for both the problems.

So, Professor will attempt in the order $B \rightarrow A$ and thus obtain 1380 points.

Test Case 4:

If Professor attempts in the order $A \rightarrow B$ then he submits Problem A after 20 minutes and Problem B after 30 minutes. Thus, he gets $500 - 20 \cdot 2 = 460$ points for problem A and $1000 - 30 \cdot 4 = 880$ points for problem B. Thus, total $460 + 880 = 1340$ points for both the problems.

If Professor attempts in the order $B \rightarrow A$ then he submits Problem B after 10 minutes and Problem A after 30 minutes. Thus, he gets $1000 - 10 \cdot 4 = 960$ points for Problem B and $500 - 30 \cdot 2 = 440$ points for Problem A. Thus total $960 + 440 = 1400$ points for both the problems.

So, Professor will attempt in the order $B \rightarrow A$ and thus obtain 1400 points.

Write Your Code

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Save & Next

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00:55:13

- Solved
- Unsolved





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