Teams (teams)

A class just got some exciting news: they have been invited to the IIOT Challenge!

There is only one rule for joining: every team must have four members, and each team needs at least one boy and at least one girl – because mixed teams make the best inventions!

In the class, there are A boys and B girls. Find the maximum number of four-member teams the class can send to the competition.

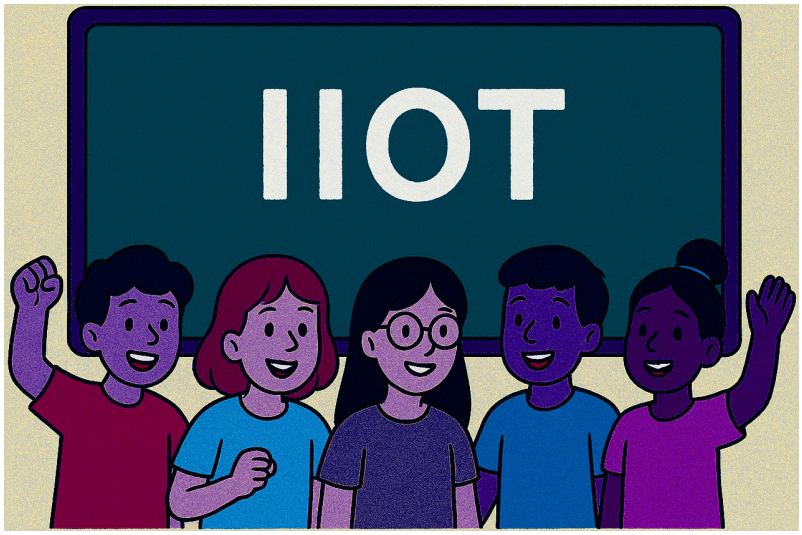

Figure 1: Students of a class.

☞ Among the attachments of this task you may find a template file `teams.*` with a sample incomplete implementation.

Input

The input file consists of:

- a line containing integer A – the number of boys.
- a line containing integer B – the number of girls.

Output

The output file must contain a single line consisting of integer T – the number of teams they can send to the competition.

Constraints

- $0 \leq A, B \leq 1\,000\,000$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (5 points) $B \leq 10$, and it is guaranteed that there is **exactly one** boy in the class ($A = 1$).

– **Subtask 3** (10 points) $A = B \leq 100$. That is, the class has an equal number of girls and boys.

– **Subtask 4** (18 points) $A, B \leq 10$.

– **Subtask 5** (28 points) $A, B \leq 1000$.

– **Subtask 6** (39 points) No additional limitations.

Examples

input	output
2 20	2
11 11	5

Explanation

In the **first sample case**, they can form 2 teams, each consisting of 1 boy and 3 girls. It can be shown that forming 3 teams is impossible.

In the **second sample case**, they can form 5 teams – for example: 2 teams consisting of 1 boy and 3 girls, 2 teams consisting of 3 boys and 1 girl, and 1 team consisting of 2 boys and 2 girls. It can be shown that forming more teams is impossible.