Practice problems for week - 2 (Week of 21 August)

Question 1

Problem Description

You are given a `3 x 3` grid filled with integers **1 to 9**, in the following way:

1	**2**	**3**
4	5	6
7	8	9

You will be given two natural numbers `A` and `B`, both between 1 and 9. Your task is to find out if the two small squares with `A` and `B` written on them are horizontally adjacent.

Input constraints

A and B are natural numbers and $1 \leq A, B \leq 9$
$A \leq B$

Input format

The only line of input contains two space-separated natural numbers `A` and `B`

Output Format

Print `YES` if the two squares are horizontally adjacent, and `NO` otherwise.

Sample input and output

Sample Input	Sample Output
5 6	YES
6 7	NO

Solution

```c
#include <stdio.h>

int main() {
    int A, B;
    scanf("%d %d", &A, &B);

    if ((A - 1) % 3 == (B - 1) % 3)
        printf("YES\n");
    else
        printf("NO\n");
    return 0;
}
```

Question 2

Problem Description

Shiven was given a problem to solve as assignment. In the problem, he was given two numbers `n` and `s`. He was asked to create a sequence of `n` **non-negative integers** such that the median of the sequence is **as large as possible** and that sum of all numbers of the sequence is `s`. Can you help Shiven find the maximum possible median of such a sequence?

Note: The definition of the median is the $\lceil \frac{n}{2} \rceil^{th}$ element of a sequence noted in the ascending order

Input constraints

$1 \leq n \leq 10^8$

Input format

The only line of input contains two space-separated integers `n` and `s`

Output Format

Output a single integer that is the **maximum median** of such a sequence.

Sample input and output

Sample Input	Sample Output
7 17	4

Solution

```c
#include <stdio.h>

int main()
{
    int n, s;
    printf("Enter two numbers: ");
    scanf("%d %d", &n, &s);
    int m = n / 2 + 1;
    int ans = s / m;
    printf("The maximum value of median is: %d\n", ans);
    return 0;
}
```