Program 1:

The problem is quite simple. You're given a number N and a positive integer K. Tell if N can be represented as a sum of K prime numbers (not necessarily distinct).

Input Format

The first line contains a single integer T, denoting the number of test cases.
Each of the next T lines contains two positive integers, N & K, separated by a single space.

Output Format

For every test case, output "Yes" or "No".

Input

```
2
10 2
1 6
```

Output

```
Yes
No
```

Test Cases:

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1. VALID INPUTS:

a) Only integer will be given as input from STDIN.

Constraints

1 <= T <= 5000
1 <= N <= 1000
1 <= K <= 1000

2. INVALID INPUTS:

a) String.
b) Fraction.
c) Negative number.

3. OUTPUT:

a) Write the output to STDOUT without any other additional text.
b) In case of invalid input print 'ERROR' to the STDOUT without any other additional text and terminate.

Program 2

Given an array of integers, task is to print the array in the order – smallest number, Largest number, 2^{nd} smallest number, 2^{nd} largest number, 3^{rd} smallest number, 3^{rd} largest number and so on…..

Examples:
Input:

arr[] = [5, 8, 1, 4, 2, 9, 3, 7, 6]
Output:
arr[] = {1, 9, 2, 8, 3, 7, 4, 6, 5}
Input:
arr[] = [1, 2, 3, 4]
Output:
arr[] = {1, 4, 2, 3}

Test Cases:
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1. VALID INPUTS:
a) Only integer will be given as input through STDIN.

2. INVALID INPUTS:
a) String s

3. OUTPUT:
a) Write the output to STDOUT without any other additional text.
b) In case of invalid input print 'ERROR' to the STDOUT without any other additional text and terminate.

Program 3

Consider the below series:
1, 2, 1, 3, 2, 5, 3, 7, 5, 11, 8, 13, 13, 17, …

This series is a mixture of 2 series – all the odd terms in the series form a Fibonacci series and all the even terms are the prime numbers in ascending order.

Write a program to find the Nth term in the series.

The value N in a positive integer that should be read from STDIN. The Nth term that is calculated by the program should be written to STDOUT. Other than the value of Nth term, no other characters/string or message should be written to STDOUT.
For example when N=14, the 14^{th} term in the series is 17.

Test Cases:
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1. VALID INPUTS:
a) Only integer will be given as input through STDIN.

2. INVALID INPUTS:
a) String.
b) Fraction.
c) Negative number as input argument.

3. OUTPUT:

a) Write the output to STDOUT without any other additional text.
b) In case of invalid input print 'ERROR' to the STDOUT without any other additional text and terminate.

Program 4

C program to reverse a String Using Recursion

Input String:
margorp emosewa

Output String:
awesome program

Test Cases:
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1. VALID INPUTS:
a) Only String will be given as input through STDIN.

2. INVALID INPUTS:
a) Characters other than alphabet.

3. OUTPUT:
a) Write the output to STDOUT without any other additional text.
b) In case of invalid input print 'ERROR' to the STDOUT without any other additional text and terminate.

Program 5

C Program to Remove all Characters in a String except Alphabet and store the resultant string within the same string. Change all upper case letters to lower case and then check whether the string is palindrome is not without using library function.

Input String:
In.form,atio1n Tec?hnol-og=y

Output String:
Information Technology
INFORMATION TECHNOLOGY
NO

Test Cases:
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1. VALID INPUTS:
a) Only String will be given as input through command line argument.

2. INVALID INPUTS:
a) No command line argument.

b) More than 1 command line arguments.

3. OUTPUT:
a) Write the output to STDOUT without any other additional text.
b) In case of invalid input print 'ERROR' to the STDOUT without any other additional text and terminate.