



# STUDENT REPORT

## DETAILS

### Name

Prasad Diptanshu

### Roll Number

3BR23ME015

## EXPERIMENT

### Title

#### SPECIAL FIBONACCI

### Description

Alex is exploring a series and she came across a special series, in which

$$f(N) = f(N-1) * f(N-1) + f(N-2) * f(N-2) \text{ mod } 47$$

where  $f(0) = 1$ ,  $f(1) = 1$

Your task is to help Alex find and return an integer value, representing the Nth number in this special series.

### Input Specification:

input1: An integer value N.

### Output Specification:

Return an integer value, representing the Nth number in this special fibonacci series.

### Sample Input:

4

### Sample Output:

29

### Source Code:

```
def fib(n, memo={}):
    if n==0 or n==1:
        return 1
    if n in memo:
        return memo[n]
    res=(fib(n-1, memo)**2+fib(n-2, memo)**2)%47
    memo[n]=res
    return res
n=int(input())
print(fib(n))
```

## RESULT

3BR

E015

23ML

3BR  
BR23

E015  
153

23ML  
3ME0

3BR2  
BR