Description

In this homework, you are going to use Jupiter RISC-V simulator to implement a function which calculate a recurrence relation $T(n)$ (specified in the following section). And you will be familiar with the behavior of a function call after you finish this homework.

Requirement

Given an integer n, your program should calculate $T(n)$ without using pseudo-instructions. And

$$T(n) = \begin{cases} T(n-100) + 2 \times T\left(\left\lfloor \frac{n}{2} \right\rfloor\right) + 5 & if \ n > 1 \\ 1 & otherwise \end{cases}$$

The range of n is $0 \le n \le 1024$, and $n \in \mathbb{N}$.

Input format	Output format
n	[Result of $T(n)$]

Input

Every input file has one line, which contains an integer n.

Output

The output should contain only one integer, that is the result of $T(n)$.

Sample Input 1	Sample Output 1
0	1

Sample Input 2	Sample Output 2
5	22

Grading policy

We will judge the correctness of your program by running the following instruction on CSIE workstation.

```
$jupiter -b [student_id]_hw3.s < input_file
```

- There are 10 testcases, 10 points per testcase
- Time limit: 30 seconds per testcase.
- Pseudo-instruction is not allowed.
- 10 points off per day for late submission.
- You will get zero points for plagiarism.

Submission

Due date: 4/13 23:59

Please name your program file [student_id]_hw3.s(lowercase) and upload it to NTUCOOL.

Reference

- Jupiter RISC-V simulator
  https://github.com/andrescv/Jupiter
- Jupiter RISC-V simulator docs
  https://github.com/JupiterSim/Docs