How could they score thirty? Let me count the ways...

It's 2028, and with the introduction of cyborgs, scoring in the National Football League has reached an all-time high. It used to be that if Alice's favorite team scored 30 points, Alice could be pretty sure that they scored 3 touchdowns with extra points (each worth 7 points), and 3 field goals (each worth 3 points).

After she though about it, though, she was surprised to find that there are actually 28,542 different sequences of scores, each of which total 30 points. Moreover, with the new high scores, the number of possibilities has exploded, and Alice wonders how many different ways her favorite team could have achieved their final score.

Input Format

Input will consist of a single integer n.

Constraints

$0 \leq n \leq 10^7$

Output Format

You should output the total number of sequences of scores that total n points, given that at any time, they can score one of the following values:

- 2 points (for a safety)
- 3 points (for a field goal)
- 6 points (for a touchdown with a missed extra point or 2-point conversion)
- 7 points (for a touchdown and an extra point)
- 8 points (for a touchdown and a two-point conversion)

Note: Since this value could be very large, you should output the value mod 1,000,000,009.

Sample Input 0

```
8
```

Sample Output 0

```
7
```

Explanation 0

There are 7 sequences of scores that lead to 8 points:

1. 2, 2, 2, 2
2. 2, 3, 3
3. 2, 6
4. 3, 2, 3
5. 3, 3, 2
6. 6, 2
7. 8

Sample Input 1

```
30
```

Sample Output 1

```
28542
```

Sample Input 2

```
150
```

Sample Output 2

```
232772521
```

Explanation 2

Ther are 2,378,571,319,779,247,918,121,475 ways to score 150 points. The final number is taken mod 1,000,000,009 to produce the answer.

Note: You will probably want to apply the mod operation to all of your intermediate results so that you do not end up with integer overflow.