Number Race

Téolas has n seconds to run a race.

In each second, he can change the remaining distance in the race by one of two methods. If the remaining distance is d, then he can do the following:

- $\lfloor \frac{d}{3} \rfloor + 7$, so if $d = 20$ before then $d = \lfloor \frac{20}{3} \rfloor + 7 = 13$ after.

- $d - 9$, so if $d = 20$ before then $d = 20 - 9 = 11$ after.

There are t races to choose from, however, he wants to compete in the longest one that he can finish. For each of these races determine whether he can finish them.

Input Format

The first line contains one integer n, the number of seconds Téolas has.

The second line contains one integer t, the number of races there are to choose from.

The next t lines contain the distances $d_1, \ldots, d_t$ of each race.

Constraints

$1 \leq n \leq 207$

$1 \leq t \leq 10^6$

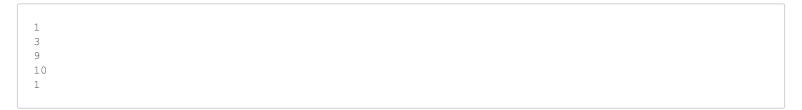$1 \leq d_i \leq 10^{100}$

Partial Credit:

- For 50% of the points $1 \leq d_i \leq 10^{15}$.

Output Format

The output consists of t lines, with the i-th line representing whether Téolas can finish the i-th race. A line is `YES` if the race can be finished otherwise `NO`.

Sample Input 0

```
1
3
9
10
1
```

Sample Output 0

```
YES
NO
YES
```

Explanation 0

For the first race in the example, Téolas can finish by doing $d - 9$ once.

For the second race in the example, he cannot finish by doing either $\lfloor \frac{d}{3} \rfloor + 7$ or $d - 9$ once.

For the third race in the example, he can finish by doing $d - 9$ once.