题目：

Find the n^{th} digit of the infinite integer sequence 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, ...

Note:

n is positive and will fit within the range of a 32-bit signed integer ($n < 2^{31}$).

Example 1:

```
Input:

3


Output:

3
```

Example 2:

```
Input:

11


Output:

0


Explanation:

The 11th digit of the sequence 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, ... is a 0,
 which is part of the number 10.
```

1.时间：O（LOGN）; 空间：O（LOGN）

```
class Solution {
    typedef long long int64_t;
```

```
public:
    int findNthDigit(int n) {
        if (n < 10) return n;
        int index = 0;
        int64_t power = 1;
        for (;; index++, power *= 10){
            int64_t len = 9 * power;
            if (n < len * (index + 1)) break;
            n -= len * (index + 1);
        }
        n--;
        return std::to_string(power + n / (index + 1))[n % (index
+ 1)] - '0';
    }
};
```