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https://www.spoj.com/problems/FCTRL/

FCTRL - Factorial

#math

The most important part of a GSM network is so called *Base Transceiver Station* (*BTS*). These transceivers form the areas called *cells* (this term gave the name to the cellular phone) and every phone connects to the BTS with the strongest signal (in a little simplified view). Of course, BTSes need some attention and technicians need to check their function periodically.

ACM technicians faced a very interesting problem recently. Given a set of BTSes to visit, they needed to find the shortest path to visit all of the given points and return back to the central company building. Programmers have spent several months studying this problem but with no results. They were unable to find the solution fast enough. After a long time, one of the programmers found this problem in a conference article. Unfortunately, he found that the problem is so called "Travelling Salesman Problem" and it is very hard to solve. If we have N BTSes to be visited, we can visit them in any order, giving us N! possibilities to examine. The function expressing that number is called factorial and can be computed as a product 1.2.3.4....N. The number is very high even for a relatively small N.

The programmers understood they had no chance to solve the problem. But because they have already received the research grant from the government, they needed to continue with their studies and produce at least *some* results. So they started to study behaviour of the factorial function.

For example, they defined the function Z. For any positive integer N, $Z(N)$ is the number of zeros at the end of the decimal form of number N!. They noticed that this function never decreases. If we have two numbers $N_1 < N_2$, then $Z(N_1) <= Z(N_2)$. It is because we can never "lose" any trailing zero by multiplying by any positive number. We can only get new and new zeros. The function Z is very interesting, so we need a computer program that can determine its value efficiently.

Input

There is a single positive integer T on the first line of input (equal to about 100000). It stands for the number of numbers to follow. Then there are T lines, each containing exactly one positive integer number N, 1 <= N <= 1000000000.

Output

For every number N, output a single line containing the single non-negative integer $Z(N)$.

Example

Sample Input:

```
6

3
```

```
60

100

1024

23456

8735373
```

Sample Output:

```
0

14

24

253

5861

2183837
```

```python
# finding zeros from end of the factorial
def findZerosFromEndOfFact(n):
    # Initialize result
    count = 0

    """
    What is number of trailing zeroes in 12000?
    12000 = 2^5 x 3 x 5^3 it will be 2^2 x 3 x 10^3 so we have 3 zeros.
    10 is divisible by 5 and 2 because of that we need find 5's power so we
will be
    Checking until number bigger than 5.
    It will be giving power of 5
    """
    while (n >= 5):
        n //= 5
        count += n

    return count

times = int(input())

for i in range(times):
    number = int(input())
    print(findZerosFromEndOfFact(number))
```

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ID		DATE	PROBLEM	RESULT	TIME	MEM	LANG
30304721	☐	2022-10-26 17:46:52	Factorial	**accepted** edit ideone it	0.73	62M	PYPY3
30304518	☐	2022-10-26 17:11:45	Adding Reversed Numbers	**accepted** edit ideone it	0.23	62M	PYPY3
30198748	☐	2022-10-12 23:17:35	Small factorials	**accepted** edit ideone it	0.03	9.1M	PYTHON3
30198737	☐	2022-10-12 23:07:38	Fun with Sequences	**accepted** edit ideone it	0.10	9.1M	PYTHON3
30198719	☐	2022-10-12 22:57:53	Fun with Sequences	**wrong answer** edit ideone it	0.03	9.2M	PYTHON3
30196789	☐	2022-10-12 17:21:08	Life, the Universe, and Everything	**accepted** edit ideone it	0.02	9.1M	PYTHON3

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