

8053 Funny Numbers

A number is funny if it meets the following criteria:

- (Sum of its all digits) - 1 is prime number. For example, if number is 123, then perform prime test on $5 = (1+2+3)-1$.
- (Sum of its first half digits) - (Sum of its second half digits) is perfect. If count of digits is odd then discard central digit. For example, if number is 12345, then discard 3 and perform perfect test on $6 = (1+2) - (4+5)$. If the difference is negative take absolute value.

In this program, you have to find whether a given number is funny or serious (not funny).

Key:

A number is prime, if it is only divisible by 1 and itself (smallest prime number is 2).

A number is perfect if sum of its all divisors (excluding itself) is equal to number itself. For example, 6 is perfect as $1+2+3 = 6$.

Input

The input consists of multiple test cases. The first line of input is the number of test cases N ($0 < N < 5000$). Each of the following N lines contain a number K ($0 < K < 10^{10}$).

Output

For each test case, print a single line that says 'Case # N : ', where N is the test case number followed by the string 'Funny' if the given number, K , is funny, print 'Serious' otherwise.

Sample Input

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4
17
6
2466
2033
```

Sample Output

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Case #1: Funny
Case #2: Serious
Case #3: Funny
Case #4: Serious
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