# Telerik Software Academy – C# Fundamentals Part 1 – Sample Exam

## Problem 4 – Binary Digits Count

You are given a sequence of **N** positive integer numbers and one binary digit **B (0 or 1).**   
Your task is to write a program that finds the number of binary digits (**B**) in each of the **N** numbers in binary numeral system. Example: 20 in the binary numeral system looks like this: 1**0**1**00**. The number of binary digits 0 of the number 20 in the binary numeral system is 3.

### Input

The input data is being read from the console.

On the first input line there will be the digit **B.**

On the second line you must read the number **N**.

On each of the following **N** lines there is one positive integer number written – the consequent number, whose sum of binary digits **B** we are searching for.

The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

The output must be printed on the console.

In the output you must have **N** lines. Each line must have 1 integer number – the number of digits **B** in the binary representation of the given consequent number.

### Constraints

* Number **N** is a positive integer between 1 and 1000, inclusive.
* Each of the **N** numbers is a positive integer between 1 and 4 000 000 000, inclusive.
* The digit **B** will be only 0 or 1.
* Allowed work time for your program: 0.25 second.
* Allowed memory: 16 MB.

### Examples

|  |  |
| --- | --- |
| **Input Example** | **Output Example** |
| 1  10  1  2  3  4  5  6  7  8  9  10 | 1  1  2  1  2  2  3  1  2  2 |
| 0  4  20  1337  2147483648  4000000000 | 3  5  31  19 |
| 0  6  1  4  16  64  256  1024 | 0  2  4  6  8  10 |