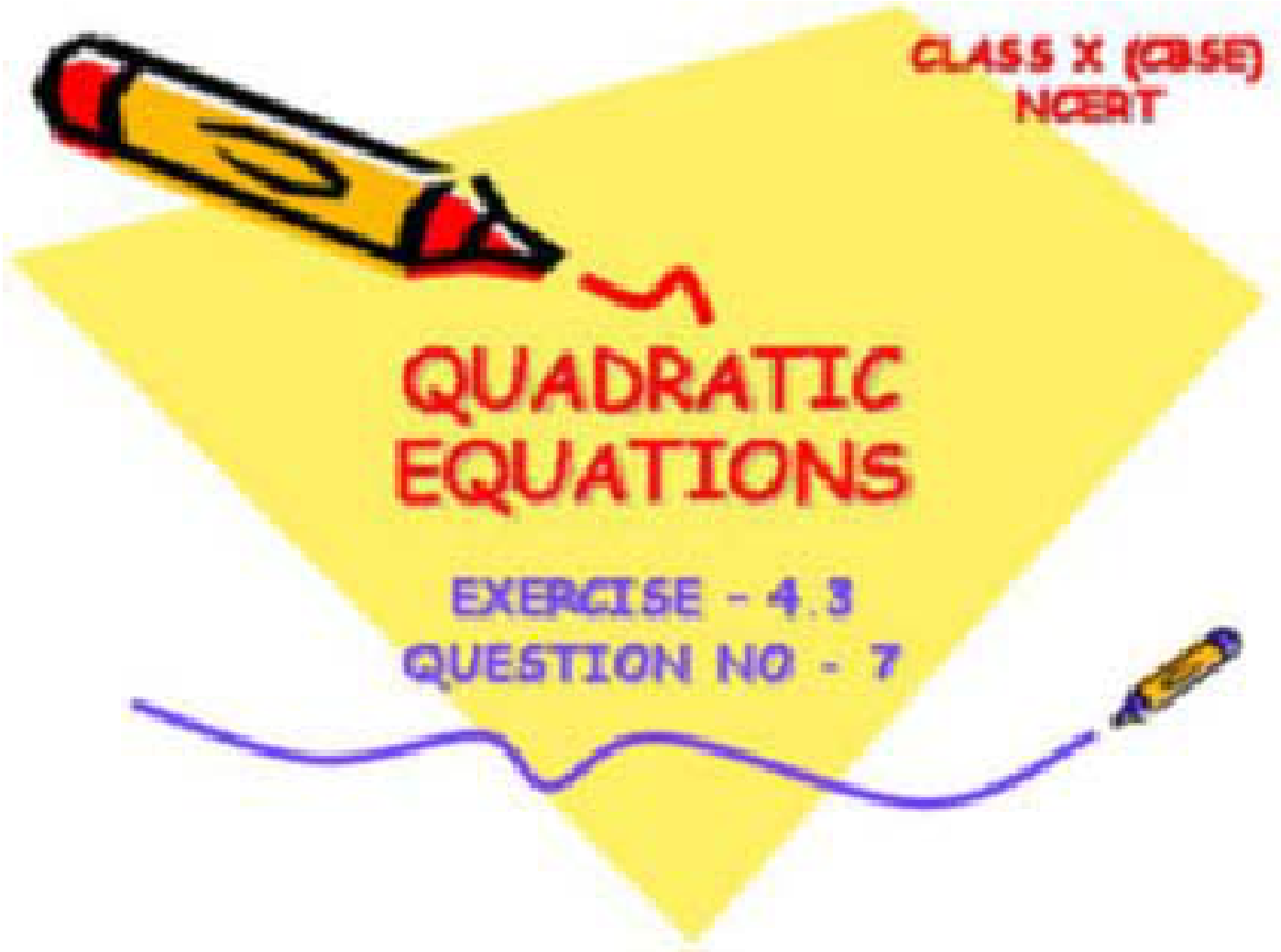
Magic Formula

You are given a quadratic function, f (n) = a × 2 + b × + c. You are also given a divisor d and a limit L. How many of the function values f (0), f (1),..., f (L) are divisible by d?



Input

Input consists of a number of test cases. Each test case consists of a single line containing the numbers a b c d L (-1000 ≤ a, b, c ≤ 1000, 1 < d < 1000000, 0 ≤ L < 1000).

Input is terminated by a line containing `0 0 0 0 0' which should not be processed.

Output

Print the answer for each test case (the number of function values f (0), f (1),..., f (L) divisible by d) on a separate line.

Sample Input

```
0 0 10 5 100
0 0 10 6 100
1 2 3 4 5
1 2 3 3 5
0 0 0 0 0
```

Sample Output

```
101
0
0
4
```