American Computer Science League

2022-2023 ● Contest 1: Next Base ● Intermediate Division

PROBLEM: Given 3 positive integers, *n*, *b*, and *s*, generate the next *n* numbers in base *b* starting with *s* in the given base. We guarantee that the base will be between 2 and 9 inclusive. We guarantee that *s* is a valid number in base *b*. Find the base 10 value for the number of times the largest possible digit in the given base is found among all of the digits in the numbers generated.

EXAMPLE: If *n*=15, *b*=8, and *s*=2, the numbers generated are 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 20. The largest possible digit in base 8 is 7 which occurs 2 times.

INPUT: There will be three integers representing the number of values to be found, the base to be used between 2 and 9 inclusive, and the starting value in the base given that will be no more than 16 digits.

OUTPUT: For each set of 3 input values, output a base 10 number representing the number of times the largest digit in the inputted base occurs in the sequence of numbers generated.

SAMPLE INPUT:

```
1. 15 8 2
2. 20 3 12
3. 25 5 324
4. 13 9 1652
5. 45 2 1111011
```

SAMPLE OUTPUT:

```
1. 2
2. 21
3. 24
4. 1
5. 170
```

TEST DATA

TEST INPUT:

1. 1000 8 10
2. 50 4 13
3. 75 9 384
4. 100 6 555
5. 25 2 110000111010

TEST OUTPUT:

1. 357
2. 34
3. 13
4. 31
5. 135