American Computer Science League

2020-2021 ● Contest 1: Numeral Triangles ● Senior Division

PROBLEM: Construct a Numeral Hex Triangle according to the following rules. You will be given three positive integers: *s*, a starting number; *d,* a delta (the amount by which to increase each number in the triangle); and *r* the number of rows. The numbers *s* and *d* will be in hexadecimal.

1. The first row contains the number *s*.
2. Each of the next rows has one more number than the previous row.
3. Each number in the triangle is *d* more than the previous number in the triangle.

Here are two examples of Numeral Hex Triangles:

start=A, delta=9, rows=5	**start=ABC, delta=F, rows=4**
A 13 1C 25 2E 37 40 49 52 5B 64 6D 76 7F 88	ABC ACB ADA AE9 AF8 B07 B16 B25 B34 B43

INPUT: There are 5 lines of data. Each line has 3 positive integers, *s*, *d*, and *r*. The numbers are separated by spaces and each is less than $1{,}000{,}000_{16}$. Recall that *s* and *d* are in hexadecimal.

OUTPUT: For each line of data, print the sum of all of the numbers on the *r*th row of the Numeral Hex Triangle, transformed into a single hexadecimal digit. To transform the sum, add the digits in base 16. If that sum is more than one hex digit, continue this process until a single hex digit is reached. For example, if the last row were $1A_{16}$, $1F_{16}$, and $24_{16,}$ the sum is 21_{16}. This is more than a single hex digit, so we add $2_{16} + 1_{16} = 3_{16}$.

SAMPLE INPUT:

```
A 9 5
ABC F 4
BAD 50 10
FED ABC 25
184 231 35
```

SAMPLE OUTPUT:

```
1. 5
2. C
3. A
4. F
5. 5
```

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PROBLEM（问题）: 根据以下规则构造一个十六进制数字三角形。 已知三个正整数：起始数 **s**; 增量 **d**（三角形中每个数字的增加量）； 数字三角形行数 **r**。 数字 **s** 和 **d** 均为十六进制。

1. 第一行由数字 s 组成。
2. 接下来的每一行都比上一行多一个数。
3. 三角形中的每个数字都比前一个数字大 d。

下面是两个十六进制数字三角形的示例：

起始数 =A, 增量 =9, 行数=5	**起始数=ABC, 增量 =F, 行数 =4**
A 13 1C 25 2E 37 40 49 52 5B 64 6D 76 7F 88	ABC ACB ADA AE9 AF8 B07 B16 B25 B34 B43

INPUT（输入）： 有 **5** 行数据。 每行有 **3** 个正整数 **s**，d 和 r。 数与数之间用空格分隔，且均小于 **1,000,000**$_{16}$。 **s** 和 **d** 是十六进制的。

OUTPUT（输出）： 对于每一行数据，计算十六进制数字三角形第 r 行上所有数各个位上数字的总和，然后将其转换为一位十六进制数并打印输出。为了将所得总和转换为一位十六进制数，需要将该十六进制数的各位数字相加。如果相加之和超过一位十六进制数，继续重复此过程，直到生成一位十六进制数为止。例如，如果最后一行是 $1A_{16}$、$1F_{16}$ 和 24_{16}，那么相加之和为 21_{16}。但这个数不是一位十六进制数，因此将各位数字相加得到 $2_{16} + 1_{16} = 3_{16}$。

SAMPLE INPUT（示例输入）：

```
A 9 5
ABC F 4
BAD 50 10
FED ABC 25
184 231 35
```

SAMPLE OUTPUT（示例输出）：

```
1. 5
2. C
3. A
4. F
5. 5
```