

American Computer Science League

2020-2021 • Contest 1: Numeral Triangles • Junior Division

PROBLEM: Construct a Numeral 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.

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.
4. Before putting a number in the triangle, it is transformed to a single digit. That is, if the number is more than one digit, replace it by the sum of the digits, repeating until the sum is one digit (for example, $1938 \Rightarrow 21 \Rightarrow 3$).

Here are two examples of Numeral Triangles:

start=2, delta=3, rows=5	start=221, delta=2, rows=4
<div><div>2</div><div>58</div><div>258</div><div>2582</div><div>58258</div></div>	<div><div>5</div><div>79</div><div>246</div><div>8135</div></div>

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 100,000.

OUTPUT: For each line of data, print the sum of all numbers on the r th line of the Numeral Triangle.

SAMPLE INPUT:

2 3 5
221 2 4
184 231 35
71 5 27
1 24 100

SAMPLE OUTPUT:

1. 28
2. 17
3. 140
4. 135
5. 397

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PROBLEM (问题) :

根据以下规则构造一个数字三角形。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 。

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 。
4. 把数填充进三角形之前，会先将它转换为一位数。也就是说，如果要填充的数多于一位，会将这个数替换为它的各位数字之和，不断重复此过程直到各位数字之和为一位数（例如 $1938 \Rightarrow 21 \Rightarrow 3$ ）。

下面是两个数字三角形示例：

起始数=2, 增量=3, 行数=5	起始数=221, 增量=2, 行数=4
<div>2</div> <div>5 8</div> <div>2 5 8</div> <div>2 5 8 2</div> <div>5 8 2 5 8</div>	<div>5</div> <div>7 9</div> <div>2 4 6</div> <div>8 1 3 5</div>

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 100,000。

OUTPUT (输出) : 对于每一行数据，打印输出数字三角形第 r 行上所有数的总和。

SAMPLE INPUT (示例输入) :

```
2 3 5
221 2 4
184 231 35
71 5 27
1 24 100
```

SAMPLE OUTPUT (示例输出) :

```
1. 28
2. 17
3. 140
4. 135
5. 397
```