

# 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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## TEST DATA

### TEST INPUT:

```
599 23 43
4326 1234 80
704 1776 200
6283 185 31
3141 59 26
```

### TEST OUTPUT:

```
1. 218
2. 399
3. 1003
4. 154
5. 126
```