

American Computer Science League

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

PROBLEM: Construct a Numeral Octal 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 octal.

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 Octal Triangles:

start=2, delta=3, rows=5	start=221, delta=2, rows=4
<div><div>2</div><div>510</div><div>131621</div><div>24273235</div><div>4043465154</div></div>	<div><div>221</div><div>223225</div><div>227231233</div><div>235237241243</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 1,000,000₈. Recall that s and d are in octal.

OUTPUT: For each line of data, print the sum of all of the digits on the r th row of the Numeral Octal Triangle as a base 10 number. For example, the output for the above table on the left is:
 $4 + 0 + 4 + 3 + 4 + 6 + 5 + 1 + 5 + 4 = 36$.

SAMPLE INPUT:

```
2 3 5
221 2 4
1 4 20
10 10 10
3245 5 11
```

SAMPLE OUTPUT:

```
1. 36
2. 38
3. 230
4. 99
5. 178
```

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PROBLEM: 根据以下规则构造一个八进制数字三角形。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）；行数 r 。其中 s 和 d 都是八进制数。

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依次比前一个数字大 d 。

下面是两个八进制数字三角形的示例：

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 10</div> <div>13 16 21</div> <div>24 27 32 35</div> <div>40 43 46 51 54</div>	<div>221</div> <div>223 225</div> <div>227 231 233</div> <div>235 237 241 243</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 1,000,000₈。注意 s 和 d 都是八进制数。

OUTPUT (输出) : 对于每一行数据，计算八进制数字三角形第 r 行上所有数各个位上数字的总和，然后将其转换为十进制数并打印输出。例如，上述左侧表格中八进制数字三角形的输出为： $4 + 0 + 4 + 3 + 4 + 6 + 5 + 1 + 5 + 4 = 36$ 。

SAMPLE INPUT (示例输入) :

```
2 3 5
221 2 4
1 4 20
10 10 10
3245 5 11
```

SAMPLE OUTPUT (示例输出) :

```
1. 36
2. 38
3. 230
4. 99
5. 178
```