AMERICAN COMPUTER SCIENCE LEAGUE

2019-2020 **Contest #1**

Intermediate Division - Number Transformation

PROBLEM: Given a positive integer (call it N) and a position in that integer (call it P) transform N. To transform N, find the P^{th} digit of N from the right. Replace each of the digits to the left of the P^{th} digit by the sum of that digit and the P^{th} digit. If the sum is greater than 9, use just the units digits (see the second example below). Replace each of the digits to the right of the P^{th} digit by the absolute value of the difference between it and the P^{th} digit. Do not change the P^{th} digit.

Example 1: N=102439, P=3. Answer is: (1+4)(0+4)(2+4)4(|3-4|)(|9-4|) => 546415

Example 2: N=4329, P=1. Answer is: (4+9)(3+9)(2+9)9 => (13)(12)(11)9 => 3219

INPUT: There will be 5 sets of data. Each set contains two positive integers: N and P. N will be less than 10^{15} , and P will be valid. No input will cause an output to have a leading digit of 0.

OUTPUT: The transformed value of each input set. The printed number may not have any spaces between the digits.

SAMPLE INPUT: (http://www.datafiles.acsl.org/2020/contest1/int-sample-input.txt)

```
296351 5
762184 3
45873216 7
19750418 6
386257914 5
```

SAMPLE OUTPUT:

1. 193648
2. 873173
3. 95322341
4. 86727361
5. 831752441

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TEST DATA

TEST INPUT:

```
4318672 4
35197545 1
975318642 9
9876543210 5
314159265358 10
```

TEST OUTPUT:

1. 2198216
2. 80642095
3. 924681357
4. 3210941234
5. 754315221114