Problem RANDPOINTS: Random Points

Write a program to generate a list of random 3D points in space, and then compute the distance between the pair of closest points. Also determine how many distinct pairs of points are this exact distance apart.
Generate the random points using the following pseudo-random number generator. Starting with a given $seed_0$:

$$seed_{i+1} = (seed_i * 16807) mod (2^{31} - 1)$$

The ith random number (starting at $i = 1$) is given by:

$$rand_i = (seed_i \ mod (2 * range)) - range$$

The 3D points are triples of 3 successive random numbers:
$(rand_1, rand_2, rand_3)$
$(rand_4, rand_5, rand_6)$
$(rand_7, rand_8, rand_9)$
...

Input

The first line gives the number of test cases. Each test case consists of three integers: You will be given an N (the number of points), the range, and the initial seed. The random numbers produced by the generator will be between $-range$ and $range - 1$, inclusive. N will be between 2 and 150000, inclusive. $range$ will be between 1 and 1000000, inclusive. $seed$ will be between 1 and 1000, inclusive.

Output

For each test case, print two numbers on one line: the first element should be the square of the distance between the pair of closest points, and the second element should be the number of distinct pairs of points that have this same squared distance. Therefore, ignore any duplicate points. You may safely assume: There will be at least 2 unique points. The square of the distance of the closest pair of points will be less than 1000000000.
NOTE: Be sure to use 64-bit arithmetic for the multiply and mod in the random-number generator, and for computing squared distances.

Sample Input 1

```
5
3 100 1
10000 1 7
25 1 12
15 5 504
50000 1000000 75
```

Sample Output 1

```
9163 1
1 12
1 9
5 2
1252249 1
```