Sequences

Mr. Panda needs your help to generate some sequences for his students' math homework. Specifically, he needs to generate two types of sequences, arithmetic sequences and geometric sequences.

An arithmetic sequence can be defined by two numbers, **A** and **D**, where **A** is the first number in the sequence and the sequence is formed by the numbers **A, A+D, A+2D, A+3D, …**

A geometric sequence can be defined by two numbers, **A** and **R**, where **A** is the first number in the sequence and the sequence is formed by the numbers **A, AR, AR^2, AR^3, AR^4…**

Mr. Panda gives you the type of sequence, the two defining numbers and the number of terms to generate. Help him create a program to generate the sequence.

Input
The input contains 3 lines.
The first line contains a single integer **N**, the number of terms in the sequence to be generated.
The second line contains a single integer **T**, which will be either 1 or 2.
If **T = 1**, you need to generate an **arithmetic** sequence and the third line contains 2 integers, **A** and **D**, representing the two numbers that define the sequence as described above.
If **T = 2**, you need to generate a **geometric** sequence and the third line contains 2 integers, **A** and **R**, representing the two numbers that define the sequence as described above.
The first N terms in the sequence will fit in a 'long' data type.

Output
The output should contain one line with **N** integers representing the sequence to be generated.
There should be exactly one space between each pair of integers.
Do not print a space after the last integer.

Limits
- $1 \leq \mathbf{N} \leq 100$
- **T** = 1 or 2
- **A, D, R** will fit in a 'long' data type and can be positive, negative or zero.

Sample Input (**sequences1.in**)	Sample Output (**sequences1.out**)
5 1 2 3	2 5 8 11 14
Sample Input (**sequences2.in**)	Sample Output (**sequences2.out**)
5 2 2 3	2 6 18 54 162

Notes:

1. You should develop your program in the subdirectory `ex1` and use the skeleton java file provided. You should not create a new file or rename the file provided.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable.
3. Please be reminded that the marking scheme is:
   a. Public Test Cases (1%)
      i. 1% for passing **all** test cases, 0% otherwise
   b. Hidden Test Cases (1%)
      i. Partial scoring depending on test cases passed
   c. Manual Grading (1%)
      i. Overall Correctness (correctness of algorithm, severity of bugs)
      ii. Coding Style (meaningful comments, modularity, proper indentation, meaningful method and variable names)

Skeleton File – Sequences.java

You are given the skeleton file `Sequences.java`. You should see a non-empty file when you open the skeleton file. Otherwise, you might be in the wrong working directory.
You should see the following contents when you open the skeleton file:

```
/**
 * Name         :
 * Matric. No   :
 * PLab Acct.   :
 */

import java.util.*;

public class Sequences {
    private void run() {
        //implement your "main" method here
    }

    public static void main(String[] args) {
        Sequences newSequences = new Sequences();
        newSequences.run();
    }
}
```