This is a preparation project. You do **not** need to submit the project, but you are encouraged to practice it before doing other projects.

In this project you need to write a program to implement integer polynomials and the “+”, “−”, “×” operations.

Specifically, your program will read parameters and polynomials from a file named “input.txt” (under the same directory). Then your program needs to create a file named “output.txt” (under the same directory) and prints the results to “output.txt”. (Please check the attached sample “input.txt” and “output.txt”.)

In “input.txt”:

1. First Line is the degree of f(x).
2. Second line is the coefficients of f(x), from leading coefficient to the constant, separated by one blank space.
3. Third line is the degree of g(x).
4. Fourth line is the coefficients of g(x), from leading coefficient to the constant, separated by one blank space.

In “output.txt”:

1. First line is the coefficients of f(x)+g(x), from leading coefficient to the constant, separated by one blank space.
2. Second line is the coefficients of f(x)−g(x), from leading coefficient to the constant, separated by one blank space.
3. Third line is the coefficients of f(x)×g(x), from leading coefficient to the constant, separated by one blank space.

Important:

1. leading coefficient should not be 0 unless the polynomial is 0.

Example 1: if f(x) = 2x and g(x) = −2x + 1, then f(x) + g(x) = 1 instead of 0x + 1. Thus in the first line of “output.txt” it should print 1 instead of 0 1.

Example 2: if f(x) = 2x + 2, g(x) = −2x − 2, then f(x) + g(x) = 0 instead of 0x + 0. Thus in the first line of “output.txt” it should print 0 instead of 0 0.

1. In this course all programs will be tested using **command line**. So try to compile and run your program using **command line**, and compare the results with those in the sample output.