Computer Programming II — Midterm Exam #2

**The Problem**

The problem is to multiply two polynomials.

**The Input**

The input consists of two lines. Each line consists of a nonnegative integer *n* followed by *n* pairs of integers *c* and *e*, where *c* represents the coefficient and *e* represents the exponent of a term in a polynomial. The exponent *e* must be nonnegative.  No integer has more than four digits. These integers will be separeted by spaces.

**The Output**

The output consists of two lines. Both lines are the product of two polynomials in the form 48x^20 + 32x^19 + 8x^14 + 24x^11 + 16x^10 + 4x^5.

**Sample Input**

3 6 10 4 9 1 4  
2 8 10 4 1

**Sample Output**

48x^20 + 32x^19 + 8x^14 + 24x^11 + 16x^10 + 4x^5  
48x^20 + 32x^19 + 8x^14 + 24x^11 + 16x^10 + 4x^5

Please implement all member functions of the class templates vector, list and polynomial defined in Vector.h, list.h and polynomial.h to complete the program which solves the polynomial multiplication problem above.

Grading rule

Output correct:

10% vector< T >::insert

10% vector< T >:: erase

20% list< T >::list( const list &x )

20% list< T >::insert

20% list< T >:: erase

20% Polynomial< T >::insert

Output not completely correct:

9% vector< T >::insert

9% vector< T >:: erase

18% list< T >::list( const list &x )

18% list< T >::insert

18% list< T >:: erase

18% Polynomial< T >::insert