CSI 32 Final Exam, Review Session 2

1. Assume that **myArray** is a non-empty built-in array of *integers* (not the C++ style array when we include the header <array>). What does the following statement do?

```
std::cout<< *(myArray+4);
```

2. Write three definitions of a function that returns a **product of two values** of type double using:
(a) passing parameters by value
(b) passing parameters by reference, with a reference argument
(c) passing parameters by reference, with a pointer argument

Follow-up questions:
1) What can I do to “prohibit” any changes to the arguments for cases (b) and (c)?
2) Where can approaches (b) and (c) be useful?
   Hint: what C++ limitation does it help to overcome?

3. Define a template function, that takes an array of values, finds the greatest of them, and returns it.

4. Give an *interface* of the `class Polynomial`
The internal representation of a Polynomial is an array of coefficients: the value at position i is the coefficient of the term with the variable to the power of i.

12	-9	0	4	0	11	5
0	1	2	3	4	5	6

↓

$$12 - 9x + 4x^3 + 11x^5 + 5x^6$$

The class should have a *constructor* and a *destructor*, functions *get* and *set*, and provide the following operator capabilities:
(1) operator+ (overloads addition of two Polynomials)
(2) operator- (overloads subtraction of two Polynomials)
(3) operator* (overloads multiplication of two Polynomials)
(4) operator+= (overloads addition assignment)
(5) operator-= (overloads subtraction assignment)
(6) operator*= (overloads multiplication assignment)

Give definitions of constructor and destructor, but provide only prototypes for the rest.