# Part 1 of the Operator Overloading Lab

Assume that a and b are myarray objects. Specify the corresponding member and non-member prototypes for the following overloaded operator expressions. If you cannot define the prototypes in one of these ways, please specify with an N/A. The first two have been completed for you. Please remember to use appropriate return types, and pass by reference where necessary.

***3 marks per answer, total of 30.*** *Look for:*

1. *Correct determination of whether operator is possible in this case (N/A if not)*
2. *Correct arguments.*
3. *Correct return type.*

*Parts of answers that are* ***Bold, Italic and Underlined*** *are considered optional for this exercise.*

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| --- | --- | --- |
| **Expression** | **Defined as Member Functions** | **Defined as Non-Member Functions** |
| **a+b** | **myarray operator+(myarray b);** | **myarray operator+(myarray a, myarray b) ;** |
| **1+a** | **N/A** | **myarray operator+(int a, myarray b);** |
| **a+1** | myarray operator+ (int b)***;*** | myarray operator+ (myarray a, int b)***;*** |
| **a=b** | myarray ***&*** operator= (***const*** myarray ***&*** b)***;*** | N/A |
| **a>b** | bool operator> (myarray b)***;*** *-0.5 if myarray type is returned without explanation* | bool operator> (myarray a, myarray b); *-0.5 if myarray type is returned without explanation* |
| **10<b** | N/A | bool operator< (int a, myarray b); *-0.5 if myarray type is returned without explanation* |
| **cin>>a** | N/A | istream & operator>> (istream & is, myarray & b); ***Note:*** *reference is required for all parameters and returns for this operator to work correctly. Students should be able to deduce this.* |

The following expressions are examples of function calls and function headers. Determine which are **Member** functions and which are **Non-Member** functions. If you think an expression might be both, provide a reason.  
***2 marks per line, total of 8.*** *Some students try to claim that max and min could be members referred to from within class. Do not accept this.*

|  |  |  |
| --- | --- | --- |
| **Expression** | **Member** | **Non-Member** |
| **max(a, b);** | No | **Yes** |
| **a.printit();** | **Yes** | No |
| **int myclass::sum(void)** | **Yes** | No |
| **float min(float a, float b)** | No | **Yes** |