Exercise A:

Program output and its order	Your explanation (why and where is the cause for this output)
constructor with int argument is called.	Line 12 in exAmain: Mystring c = 3; This calls the constructor Mystring::Mystring(int n), which makes an empty string with a total capacity of 3.
default constructor is called. default constructor is called.	Line 18 in exAmain: Mystring x[2]; This calls the default constructor: Mystring::Mystring() twice to create an array of two MyString objects.
constructor with char* argument is called.	Line 22 in exAmain: Mystring* z = new Mystring("4"); This calls the constructor Mystring::Mystring(const char *s), which creates a new MyString object initialized with the string “4”
copy constructor is called. copy constructor is called.	Line 24 in exAmain: x[0].append(*z).append(x[1]); The append function creates a temp variable that requires the copy constructor in Line 98 in mystring.cpp: char *tmp = new char [lengthM + other.lengthM + 1]; So to append x[0] and x[1], there needs to be two calls to the copy constructor.
destructor is called. destructor is called.	After the append function in mystring.cpp. The MyString destructor deallocates memory for charsM when it is done copying, so once for x[0] and once for x[1].
copy constructor is called.	Line 26 in exAmain: Mystring mars = x[0]; This creates a copy of x[0] into the mars object.
assignment operator called.	Line 28 in exAmain: x[1] = x[0]; This is the assignment operator that copies the content of x[0] to x[1].
constructor with char* argument is called. constructor with char* argument is called.	Line 30 in exAmain: Mystring jupiter("White"); This calls the constructor Mystring::Mystring(const char *s) which creates an object “jupiter” with the string “White”. Line 32 in exAmain: ar[0] = new Mystring ("Yellow"); This calls the constructor Mystring::Mystring(const char *s) which creates an array with the string “Yellow”.
destructor is called. destructor is called. destructor is called. destructor is called. destructor is called.	Line 35: x[2], mars, and jupiter go out of scope and Line 37: ar is deleted so the MyString destructor is called and they are deleted so the memory is freed.
constructor with char* argument is called.	Line 39 in exAmain: Mystring d = "Green"; This calls the constructor Mystring::Mystring(const char *s) which creates an object “d” with the string “Green”.
Program terminated successfully.	Line 41: cout << "\nProgram terminated successfully." <<endl;
destructor is called. destructor is called	Line 43: Destructors for c and d are called.