1. (4 pts) What will be the output of the following program? Explain how you reached your solution by filling in comments with the missing values that result after each statement is run.

```c
int main() {
    int a[5] = {0, 1, 2, 3, 4};
    int x, w, y;
    x = a[2]--;  // x = __, a = {__ , __ , __ , __ , __ }
    w = --a[2];  // w = __, a = {__ , __ , __ , __ , __ }
    y = a[++x];  // x = __, y = __, a = {__ , __ , __ , __ , __ }
    printf("%d, %d, %d\n", x, w, y);
    return 0;
}
```

2. (4 pts) Identify an error in the following C code fragment (assume that this code is embedded in the otherwise correct program):

```c
int x[8], i;
for (i = 0; i <= 9; ++i )
    x[i] = i;
```

State what the problem is. Is this problem detected by a C compiler? If so, what is the error produced? If the program compiles, what happens when it is run?

3. (4 pts) Given the following two dimensional array declaration

```c
double m[2][4];
```

(a) write a code fragment that fills the entire array with some values (does not matter what they are) - use the array notation

(b) write a code fragment that fills the entire array with some values (does not matter what they are) - use the pointer notation

4. (4 pts) Write a declaration for a function that given two integers computes and returns the larger. The two integers passed to the function should not be changed.

5. (4 pts) Write a definition for a function that given a character, converts it to lower case (if the character passed to this function is already lower case it should stay unchanged). This function does not return any value.

6. (5 pts) Write a definition for a function that given two strings computes their total length. You cannot use the strlen() function. The function should take only the two strings as its parameters.

7. (5 pts) Write a definition for a function that given an array of integers sorts the numbers in the array from smallest to largest. Hint: what are the parameters that such function needs?

**How to submit:** Your submission should be on paper and handed in at the beginning of the class on Monday, Feb. 9. It has to be typed (no hand-written assignments will be accepted). You should answer the questions in order. Read the questions carefully and make sure you are answering the question that is asked.