CSCI 1730 Lab 05 Annabell Ortiz

Functions, pointers, and Tricky Declarations Activity

1. The output of the code is 22 and 11. The variable that is passed by reference is x.
2. &x is used because the function divby2 takes the reference of a variable to gain access to its arguments.
3.

Declaration	Meaning
int x;	x is an int
int * x;	x is a pointer to an int
char ** x;	x is a pointer to a pointer to a char
int * x [5];	x is an array of 5 pointers to ints
int (* x) [5];	x is a pointer to an array of 5
int (* x [5]) [5];	x is an array of 5 pointers to arrays of 5 ints
int * (* x [5]) [5];	x is an array of 5 pointers to arrays of 5 pointers to ints
int x();	x is a function with no parameters that returns an int
int x(int);	x is a function that takes an int as a parameter that returns an int
int * x();	x is a function with no parameters that returns a pointer to an int
int * x(int *);	x is a function that takes a pointer to an int as a parameter that returns a pointer to an int
int (* x)();	x is a pointer to a function with no parameters that returns an int
int ** (* x)(int **);	x is a pointer to a function that takes a pointer to a pointer to an int as a parameter that returns a pointer to a pointer to an int

Const Pointers Activity

1.
   a. All statements of the code marked for part a are valid.
   b. Statement 1 and 3 are valid. Statement 2 is invalid because it is a pointer that points to a constant int so the data it points to cannot be modified.
   c. Statement 1 is valid. Statement 2 is invalid because it is a pointer that points to a constant int so the data is points to cannot be modified. Statement 3 is invalid because the pointer is constant so it cannot be modified to point to other data.
2.

a. All statements are valid.

b. Statements 1 and 2 are valid. Statement 3 is not valid because it is trying to change a constant pointer to point to something else.

c. Statement 1 and 2 are valid. Statement 3 is invalid because it is trying to return a value in an index that is not in bounds of the array

3.

a. Statement 1 and 2 are valid. Statement 3 is not valid because you cannot assign the increment operators to a function.

b. Statement 1 and 2 are valid. Statement 3 is not valid because it is trying to change the constant int that is being pointed to. Statement 4 is not valid because you cannot assign the increment operators to a function. Statement 5 is not valid because it is trying to change the constant int.

c. Statements 1 and 2 are valid. Statement 3 is not valid because it is trying to change the constant int that is being pointed to. Statement 4 is not valid because you cannot assign the increment operators to a function. Statement 5 is valid.