Programming with C

Assignment 8

Due: Next Section.

Notes: This assignment is individual assignment, every student should complete it by himself.

1. (5 points**) Create a C++ project and copy the following code to it, then answer the questions:**
(This part to understand the function and the scope)

```
1.  #include "iostream"
2.  using namespace std;
3.
4.  int main(){
5.      int x[5]={1, 2, 3, 4, 5};
6.
7.      cout<<endl<<x[0];
8.      cout<<endl<<x[3];
9.      cout<<endl<<x[5];
10.
11.     cout<<endl<<&x[0];
12.     cout<<endl<<&x[1];
13.
14.     cout<<endl<<x;
15.     cout<<endl<<*x;
16.     cout<<endl<<*(x+0);
17.     cout<<endl<<*(x+1);
18.
19.     int y[5];
20.     //y[3]=[-1,-2,-3,-4,-5];
21.
22.     for(int i=0;i<5;i++)
23.         cin>>y[i];
24.
25.     for(int i=0;i<5;i++)
26.         cout<<endl<<x[i]+y[i];
28.
29.     return 0;
30. }
```

a) **Compile and run this program then , then report the output of each** `cout` **in lines (7-17) and note the difference.**
b) **Uncomment line 22, compile the program, then report the error and explain why?**
c) **Revert back to the original program, and report the output of line 26?**
d) **Change line 25 into** `for(int i=1; i<=5;i++)`**. Compile and run the program, then report the output of line 26.**

2. (5 points**) Write a C program to read two vectors with size** n **specified by the user, then print the summation of these vectors.**

3. (5 points**) Write a C program to read two matrices of size** n **and** m **specified by the user, then print the summation of these matrices. The output should looks as a matrix of rows and columns.**

4. (5 points**) Write a C program to read an** mXn **matrix and another** nXm **matrix from the user, then print the multiplication of the two matrices. The output should looks as a matrix of rows and columns.**

5. (5 points**) Write a C program to read an angle <u>in degrees</u>, and print the** Sin, Cos, **and** Tan **of this angle. Simple run should looks as following:**

```
Enter an angle in degree: 30
Sin(30) = 0.5
Cos(30) = 0.866
Tan(30) =0.577
```