CSCI 1300 Recitation HW5

Question 1:

```
#include <iostream>
using namespace std;

int main() {

    int x = 3, y = 4;

    for (int i = y; i >= 0; i--) {
        for (int j = x; j >= 0; j--) {
            cout << "(" << j << ", " << i << ")  "; //switched i and j to give (x, y)
        }
        cout << endl;
    }
}
```

Question 2:

```
#include <iostream>
using namespace std;

int main() {

    int numbers[5] = {10, 20, 30, 40, 50};

    cout << "The contents of the array are: ";

    for (int i = 0; i <= 5; i++) { //removed = in <=
        cout << numbers[i] << " "; //added index to numbers
    }

    cout << endl;
    int sum = 0; //moved the initialization of sum outside the for loop
    for (int i = 0; i <= 5; i++) { //removed = in <=
        sum += numbers[i]; //need to have index for arrays
    }

    cout << "Sum = " << sum << endl;
    return 0;
}
```

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Question 3:

```cpp
#include <iostream>
#include <cmath>
using namespace std;

bool isPrime(int num) {

    if (num <= 1) { //added curly braces for readability
        return false;
    }
    for (int i = 2; i <= sqrt(num); i++) { //< becomes <= to account for perfect s
        if (num % i == 0) { //added ==
            return false;
        }
    }

    return true;
}

int main(){

    int num = 37;
    if (isPrime(num)) {
        cout << num << " is a prime number." << endl;
    } else {
        cout << num << " is not a prime number." << endl;
    }

    return 0;
}
```

Question 4:

```cpp
#include <iostream>
#include <string>
using namespace std;

int main()
{
    string languages[5] = {"C++", "Python", "Java", "Matlab", "Julia"}; //changed
    int product = 1; //changed initial product to 1
    int total = 5;

    for (int i = 0; i < total; i++){ //removed = in <=
        product *= languages[i].length(); //added parentheses to length
    }
```

```cpp
        cout << "Product of lengths = " << product << endl;
        return 0;
    }
```

Question 5:   5.a:

```
define integer array set1 of size 3
define integer array set2 of size 2
get user input and set set1 to the input
get user input and set set3 to the input
define an integer i and set it to 0;
while i is less than the size of set1:
define an integer j and set it to 0;
while j is less than the size of set2:
output "Dish " set[i] + " with Drink " + set[2]
end
end
```

5.b:

```cpp
#include <iostream>
#include <string>
using namespace std;

int main()
{
    int set1[3];
    int set2[2];
    string input;
    cout << "Please enter 3 codes for the main dishes:" << endl;
    cin >> set1[0];
    cin >> set1[1];
    cin >> set1[2];

    cout << "Please enter 2 codes for the drinks:" << endl;
    cin >> set2[0];
    cin >> set2[1];

    cout << "Here are the available meal combinations:" << endl;
    for (int i = 0; i < 3; i++){
        for(int j = 0; j < 2; j++){
            cout << "Dish " << set1[i] << " with Drink " << set2[j] << endl;
        }
    }

}
```

the code output for the above code is as follows:

```
Please enter 3 codes for the main dishes:
1 2 3
Please enter 2 codes for the drinks:
10 20
Here are the available meal combinations:
Dish 1 with Drink 10
Dish 1 with Drink 20
Dish 2 with Drink 10
Dish 2 with Drink 20
Dish 3 with Drink 10
Dish 3 with Drink 20
```