Lab 5 (lab task)

- ## Q1

```cpp
#include <iostream>
using namespace std;
int main(){
int x = 1;
do
{
cout << "enter a number: ";
cin >> x;
```

- ## Q2

```cpp
#include <iostream>

using namespace std;

int main() {
   char choice;
   do {
      double num1, num2, result;
      int operation;

      cout << "Welcome To Simple Calculator Prepared By Hamdan Hafeez"<< endl;
      cout << "Enter the first number: ";   // Taking Inputs From The User
      cin >> num1;
      cout << "Enter the second number: ";
      cin >> num2;

      cout << "Select an operation:" << endl;
      cout << "1. Addition" << endl;
      cout << "2. Subtraction" << endl;
      cout << "3. Multiplication" << endl;
      cout << "4. Division" << endl;
```

```cpp
        cout << "Enter the operation (1/2/3/4): "; // Asing For Operation From The User
        cin >> operation;

        switch (operation) {          // Using Switch Statements To Execute Operation
            case 1:
                result = num1 + num2;
                cout << "Result: " << result << endl;
                break;
            case 2:
                result = num1 - num2;
                cout << "Result: " << result << endl;
                break;
            case 3:
                result = num1 * num2;
                cout << "Result: " << result << endl;
                break;
            case 4:
                if (num2 == 0) {
                    cout << "Error: Division by zero is not allowed." << endl;
                } else {
                    result = num1 / num2;
                    cout << "Result: " << result << endl;
                }
                break;
            default:
                cout << "Invalid operation selected." << endl;
        }

        cout << "Do you want to perform another calculation? (y for YES / n for NO ): ";
        cin >> choice;
    } while (choice == 'y' || choice == 'Y');

    cout << "Calculator Program Terminated." << endl<<"Thank You For Using Hamdan Hafeez's
Program";

    return 0;
}
```

- ***Q3a***

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

```cpp
int main(){
int y=2,s=0;
cout << y;
do{
s = s + y;
y = y + 2;
cout << "+"<<y;
}while(y<100);
cout <<"="<<s;
}
```

- Q3b

```cpp
#include <iostream>
using namespace std;
int main(){
int y=1,sq=0,s = 0;
cout << y;
do{
y = y + 1;
sq = y * y;
s = s + sq;
cout << "+"<<sq;
}while(y<100);
cout <<"="<<s;
}
```

- Q4a

```cpp
#include<iostream>
#include<math.h>
using namespace std;
int main(){
int res=0,n=0;
do{
res = pow(2,n);
cout << "2 ^ "<< n << "="<<res<<endl;
n=n+1;
}while( n<=20);
}
```

- Q4b

```cpp
#include <iostream>
using namespace std;
int main(){
int a,b,s=0;
cout<<"Enter the smaller odd number:";
cin>> a;
cout<<"Enter the greater odd number:";
cin>> b;
cout << a;
do{
s = s + a;
a = a + 2;
cout << "+"<<a;
}while(a<b);
cout <<"="<<s;
}
```