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Section B

# Computer programming assignment

**Home task 1:-**

```cpp
#include <iostream>

int main() {
    int n = 6; // Number for which factorial is to be calculated
    int factorial = 1;

    for (int i = 1; i <= n; ++i) {
        factorial *= i;
    }

    std::cout << "The factorial of " << n << " is: " << factorial << std::endl;

    return 0;
}
```

## Home task 2:-

```cpp
#include <iostream>
#include <cmath>

using namespace std;

int main() {
    double x1, y1, x2, y2;

    cout << "Enter the coordinates of the first point (x1 y1): ";
    cin >> x1 >> y1;

    cout << "Enter the coordinates of the second point (x2 y2): ";
    cin >> x2 >> y2;

    // Calculate the distance using the distance formula
    double distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));

    cout << "The distance between (" << x1 << ", " << y1 << ") and (" << x2
<< ", " << y2 << ") is: " << distance << endl;

    return 0;
```

}

**Home task 3:-**

```cpp
#include<iostream>
using namespace std;
int main()
{
    double c,m,k;
    cout<<"input value in centimeter:";
    cin>>c;
    m=c/100;
    cout<<"the value in meters is:"<<m<<endl;
    k=c/100000;
    cout<<"the value in kilometers is:"<<k;
    return 0;
}
```

**Home task 4:-**

```cpp
#include<iostream>
#include<cmath>
```

```cpp
using namespace std;
int main()
{
    double a,b,c;
    cout<<"input value of a:";
    cin>>a;
    cout<<"input value of b:";
    cin>>b;
    c=pow(a,2)+2*a*b+pow(b,2);
    cout<<"the answer is:"<<c;
    return 0;

}
```