**LAB HOME TASK**

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**Q1.cm to km & m conversion**

#include <iostream>

#include <cmath>

using namespace std;

int main(){

//Taking length input from user in cm and outputting it in meteres and kilometeres

double length=0;

cout<<"Enter a length in cm: "<<endl; //taking user input

cin>>length;

double l\_meter = length / 100; //converting to meter

double l\_km = length / 1000; //converting to kilometer

cout<<"Your length in meters is "<<l\_meter<<"m"<<endl;

cout<<"Your length in kilometers is "<<l\_km<<"km"<<endl;

**Q2. Polynomial**

// Taking two values from the user and using them to calculate polynomial

double a,b;

cout<<"Enter values for 'a' and 'b': "<<endl; //taking user input

cin>>a>>b;

double poly = pow(a,2) + pow(b,2) + (2\*a\*b); //calculating polynomial

cout<<"Your answer is "<<poly<<endl;

**Q3. Calculating the factorial of 6**

#include <iostream>

using namespace std;

int main(){

cout<<"Factorial of 6 is:\n";

cout<<"6 x 5 x 4 x 3 x 2 x 1 = "<<6\*5\*4\*3\*2\*1<<endl;

}

**Q4. Calculating the distance between points**

//Taking two cordinates as input from user and outputting the distance between them

double x1,y1,x2,y2;

cout<<"Enter two cordinates in the form (x,y): "<<endl; //taking user input in cordinate form

cin>>x1>>y1>>x2>>y2;

double distance = pow((pow(x1-x2,2) + pow(y1-y2,2)),0.5); //calculating distance

cout<<"The distance between these points is: "<<distance<<endl;

}