

}

**Output:**

X	Y	del	del^2	del^3	del^4
1891	46	20	-5	2	-3
1901	66	15	-3	-1	
1911	81	12	-4		
1921	93	8	.		
1931	101				

2.Ans:

**Code**

```
#include<bits/stdc++.h>
using namespace std;
int main()
{
    double x[5]={0,1,2,3,4};
    double y[5]={1,5,10,22,38};

    int m=sizeof(x)/sizeof(x[0]);

    double x_square[m],sum_x_square=0.0;
    double xy[m],sum_xy=0;

    for(int i=0;i<m;i++)
    {

        x_square[i]=pow(x[i],2);
        sum_x_square+=x_square[i];
        xy[i]=x[i]*y[i];
        sum_xy+=xy[i];
    }

    cout<<"sum of x^2 = "<<sum_x_square<<"\nsum of xy = "<<sum_xy<<endl;
}
```

**Output:**

```
G:\191311102_labfinal_q2.exe
sum of x^2 = 30
sum of xy = 243

Process returned 0 (0x0)   execution time : 1.861 s
Press any key to continue.
```

3. Ans:

**Code**

```
#include<bits/stdc++.h>
using namespace std;
int main()
{
    int i,j,n=5;
    double x_arr[6]={5,7,11,13,17};
    double y_arr[6]={150,392,1452,2366,5202};

    double X=10;

    double upper=1,lower=1,sum=0,term;
    for(i=1;i<=n;i++){
        upper=1,lower=1;
        for(j=1;j<=n;j++){
            if(j!=i){
                upper*=(X-x_arr[j]);
                lower*=(x_arr[i]-x_arr[j]);
            }
        }
        term=(upper*(y_arr[i]))/(lower*1.0);
        sum+=term;
    }
    cout<<"value at "<<X<<" is "<<sum<<endl;
}
```

**Output:**

```
G:\191311102_lab_final_q3.exe
value at 10 is 1100

Process returned 0 (0x0)   execution time : 1.790 s
Press any key to continue.
```