```c
#include<stdio.h>
#include<math.h>
int main()
{
float x[11],y[11],sum_x[20],a[5][5],b[5],sum,multi,s[10];
int n,m,i,r,j,k;
printf("Enter the last digit of your roll no\n");
scanf("%d",&r);
printf("Enter the number of data \n");
scanf("%d",&n);
printf("Enter the x data \n");
for(i=1;i<=n;i++)
scanf("%f",&x[i]);
printf("Enter the y data \n");
for(i=1;i<=n;i++)
{
scanf("%f",&y[i]);
y[i]=y[i]+(r/10.);
}
printf("Enter the degree of the polynomial\n");
scanf("%d",&m);
sum_x[0]=n;
for(i=1;i<=2*m;i++)
{
sum_x[i]=0;
for(j=1;j<=n;j++)
sum_x[i]=sum_x[i]+pow(x[j],i);
}
for(i=1;i<=m+1;i++)
{
for(j=1;j<=m+1;j++)
a[i][j]=sum_x[i+j-2];
}
for(i=1;i<=m+1;i++)
{
b[i]=0;
for(j=1;j<=n;j++)
b[i]=b[i]+pow(x[j],i-1)*y[j];
}
for(j=1;j<m+1;j++)
{
for(i=j+1;i<=m+1;i++)
{
multi=-a[i][j]/a[j][j];
for(k=1;k<=m+1;k++)
a[i][k]=a[i][k]+multi*a[j][k];
b[i]=b[i]+multi*b[j];
}
}
for(i=m+1;i>=1;i--)
{
sum=0;
for(j=i+1;j<=m+1;j++)
sum=sum+a[i][j]*s[j];
s[i]=(b[i]-sum)/a[i][i];
}
for(i=0;i<=m;i++)
printf("\n coefficient of x^%d=%7.4f\n",i,s[i+1]);
printf("correct upto 4D\n");
return(0);
```

```
}
//*Output*//
Enter the last digit of your roll no
3
Enter the number of data
8
Enter the x data
2.1 3.1 4.1 5.1 6.1 7.1 8.1 9.1
Enter the y data
6.2571 8.9821 11.6305 15.8305 19.3065 22.5247 27.8189 31.2772
Enter the degree of the polynomial
2

 coefficient of x^0= 1.2123

 coefficient of x^1= 2.2107

 coefficient of x^2= 0.1273
correct upto 4D
```