PROBLEMA:

Una persona que padece obesidad registra un peso de 250 kg, para poder bajar de peso se le asigna una dieta de 1500 calorías diarias y ejercicio de 30 minutos mínimo.
Tras iniciar su dieta decide registrar semanalmente el peso que pierde para llevar un buen control de su pérdida de peso y poder informar a los doctores adecuadamente como ha sido su progreso.

Semana	Peso perdido en la semana [Kg]	Peso perdido en total [kg]
1	6.300	6.300
2	10.250	16.550
3	9.850	26.400
4	8.600	35.000
5	7.500	42.500
6	6.258	48.758
7	9.100	57.858
8	7.142	65.000
9	8.520	73.520
10	5.800	79.320
11	5.250	84.570
12	5.430	90.000
13	4.800	94.800
14	5.250	100.050
15	6.000	106.050
17	3.950	110.000
18	3.750	103.75
19	4.100	107.850
20	3.220	111.070
21	3.930	115.000
22	2.500	117.500
23	1.850	119.350
24	3.100	122.45
25	2.550	125.000
26	3.300	128.300
27	2.500	130.800
28	1.950	132.75
29	2.250	135.000
30	3.200	138.200
31	2.600	140.800
32	2.500	143.300
33	1.700	145.000
34	2.500	147.500

Al revisar los datos se percatan que no hubo registro del peso perdido semanal y total en la semana 16, por lo tanto se desea saber por algún método de pronosticación de datos, cuanto perdió en esa semana 16 no registrada y cuantó peso habrá perdido a las 40 semanas de haber iniciado su proceso de perdida de peso.

Problema y concluciones	10
Graficas	10
lineal	10
parabolico	10
Cubico	10
exponencial	10
Potencias	10
Crecimiento	10
Gowpetz	10

Calif. 10

AE1_CD4_I1

```
// TAREA_4_MNI.cpp: define el punto de entrada de la aplicación de consola.
//Equipo: Los Ing.
//Cervantes Chavez Sofia
//De Jesús Monroy O. Imannol
//Terrones Quiroz Diana

#include "stdafx.h"
#include <iostream>
#include<stdio.h>
#include<stdlib.h>
#include<math.h>
#define DIM 50

void lineal(int n, float x[DIM], float y[DIM]);
void GaussJordan(int n, float A[DIM][DIM]);
void eliminaGJ(int n, float C[DIM][DIM]);
float ValMaxCol( int rowpvt, int n, float vec[DIM]);
void pivoteo(int n, float C[DIM][DIM], int rowpvt, int rmax );
void comprueba(int n, float A[DIM][DIM]);
void regresion(int n, float x[DIM], float y[DIM]);
void parabolico(int n, float x[DIM], float y[DIM]);
void cubico(int n, float x[DIM], float y[DIM]);
void exponencial(int n, float x[DIM], float y[DIM]);
void potencias(int n, float x[DIM], float y[DIM]);
void crecimiento(int n,float x[DIM], float y[DIM]);
void Gowpetz(int n,float x[DIM], float y[DIM]);

        FILE *fe;
        FILE *fs;
        float X[DIM],C[DIM][DIM], xint, xext, YYint, YYext, a0, a1, a2, a3, ZZ[DIM];
        float sumx, sumx2, sumx3, sumy, sumxy, sumx2y, sumx3y, sumx4, sumx5, sumx6, x2[DIM], x3[DIM], x3y[DIM], x4[DIM],
x5[DIM], x6[DIM], xy[DIM], x2y[DIM], sr, st, Ymedia, desest, destip, coefdet, coefcor;
        float a[DIM][DIM], YY[DIM], delta[DIM], delta2[DIM], beta[DIM], beta2[DIM];
        int i;

int main(){
        int n, i, j;
        float x[DIM], y[DIM], Z[DIM][DIM];
        fe = fopen("entrada.txt","r");
        fs = fopen("salida.txt","w");
        fscanf(fe,"%d", &n);
        for(i=1; i<=n; i++){
                for(j=1; j<=2; j++){
                fscanf(fe,"%f", &Z[i][j]);
                x[i]=Z[i][1];
                y[i]=Z[i][2];
                }
        }
        fscanf(fe,"%f %f", &xint, &xext);

        fprintf(fs,"TAREA 4, MNI, Equipo LOS ING.\nCervantes Chavez Sofía\nDe Jesús Monroy O. Imannol\nTerrones Quiroz
Diana\n\n Datos Recibidos:\n");
        fprintf(fs,"    x\t              y\t\n");
        for(i=1; i<=n; i++){
                fprintf(fs,"%f\t %f\t\n", x[i], y[i]);
        }
```

AE1_CD4_I1

```
        fprintf(fs,"____________________________________________________________MÉTODO DE AJUSTE 
LINEAL__________________________________________________________________\n");

fprintf(fs,"______________________________________________________________________________________________________________________
______________________________\n");
        lineal(n, x, y);
        regresion(n, x, y);
        fprintf(fs,"__________________________________________________________MÉTODO DE AJUSTE 
PARÁBOLICO______________________________________________________________\n");

fprintf(fs,"______________________________________________________________________________________________________________________
______________________________\n");
        parabolico(n, x, y);
        fprintf(fs,"__________________________________________________________MÉTODO DE AJUSTE 
CUBICO__________________________________________________________________\n");

fprintf(fs,"______________________________________________________________________________________________________________________
______________________________\n");
        cubico(n, x, y);
        fprintf(fs,"\n\n________________________________MÉTODO DE AJUSTE EXPONENCIAL_______________________________\n");
        fprintf(fs,"____________________________________________________________________________________________\n");
        exponencial(n,x,y);
        fprintf(fs,"\n\n________________________________MÉTODO DE AJUSTE DE POTENCIAS_______________________________\n");
        fprintf(fs,"____________________________________________________________________________________________\n");
        potencias(n,x,y);
        fprintf(fs,"\n\n________________________________MÉTODO DE AJUSTE DE CRECIMIENTO_____________________________\n");
        fprintf(fs,"____________________________________________________________________________________________\n");
        crecimiento(n,x,y);
        fprintf(fs,"\n\n________________________________MÉTODO DE AJUSTE DE GOWPETZ_________________________________\n");
        fprintf(fs,"____________________________________________________________________________________________\n");
        Gowpetz(n,x,y);
        return 0;
}

//MÉTODO DE AJUSTE LINEAL
void lineal(int n, float x[DIM], float y[DIM]){
        sumx  = 0;
        sumy  = 0;
        sumx2 = 0;
        sumxy = 0;

        for(i=1; i<= n; i++){
         x2[i]  = x[i]*x[i];
         xy[i]  = x[i]*y[i];
         sumx = sumx + x[i];
         sumx2= sumx2+ x2[i];
         sumy = sumy + y[i];
         sumxy= sumxy+ xy[i];
        }

        a[1][1] = n ; a[1][2] = sumx ; a[1][3]= sumy;
        a[2][1]= sumx; a[2][2]= sumx2; a[2][3]= sumxy;

        GaussJordan(2, a);
```

AE1_CD4_I1

```
        for(i=1; i<=n; i++){
                YY[i] = a0 + a1*x[i];
        }

}

//MÉTODO DE GAUSS- JORDAN
void GaussJordan(int n, float A[DIM][DIM]){
        int i,j;
        float  H[50][50], Ec[50];
        for(i=1;i<=n;i++){
                for(j=1;j<=n+1;j++){
                        C[i][j]=A[i][j];
                }
        }
        //fprintf(fs, "\n******METODO GAUSS-JORDAN******\n");
        //fprintf(fs, "______________________________\n");
        for(i=1;i<=n;i++){
                for(j=1;j<=n+1;j++){
                fscanf(fe,"%f", &A[i][j]);
                H[i][j]=A[i][j];
                }
        }
                /*fprintf(fs, "\n______MATRIZ ORIGINAL %dx%d______\n",n,n);*/
                /*for(i=1;i<=n;i++){
                        fprintf(fs,"\t x%d",i);
                        }*/
                        /*fprintf(fs,"\t b");
                        fprintf(fs,"\n");*/
        for(i=1;i<=n;i++){
        /*fprintf(fs, " Ec.%i=\t",i);*/
                for(j=1;j<=n+1;j++){
                Ec[j]=H[i][j];
                        /*fprintf(fs,"%.2f\t", Ec[j]);*/
                }
        /*fprintf(fs,"\n");*/
    }
    /*fprintf(fs, "______________________________\n");*/
        eliminaGJ(n,C);
        a0 = C[1][n+1];
        a1 = C[2][n+1];
        a2 = C[3][n+1];
        a3 = C[4][n+1];
        comprueba(n,A);
}

void eliminaGJ(int n, float C[DIM][DIM]){
        int r,i,j,k;
        float rm,pivot,cons;
        float copia[DIM], tempi[DIM], tempr[DIM];
                for(r=1;r<=n;r++){
                        for(i=1;i<=n;i++){
                                copia[i]=C[i][r];
                        }
                rm=ValMaxCol(r,n,copia);
                        if(rm!=r)
        pivoteo(n,C,r,rm);
                        pivot=C[r][r];
                                for(j=1;j<=n+1;j++){
                                        C[r][j]=C[r][j]/pivot;
                                }
                                        for(i=1;i<=n;i++){
                                                if (r!=i){
                                                        cons=-1*C[i][r];
                                                                for(j=1;j<=n+1;j++){
                                                                tempi[j]=cons*C[r][j];
                                                                C[i][j]=tempi[j]+C[i][j];
                                                        }
                                        }
                                }
            /*fprintf(fs,"\n____MATRIZ CON COLUMNA N°%d ELIMINADA____\n",r);*/
          /* for(i=1;i<=n;i++){
                        fprintf(fs,"\t x%d",i);
                        }*/
                        /*fprintf(fs,"\t b");
                        fprintf(fs,"\n");*/
                        /*for(i=1;i<=n;i++){
                                fprintf(fs, " Ec.%i=\t",i);
                                        for(j=1;j<=n+1;j++){
                                        fprintf(fs,"%.2f\t",C[i][j]);
                                        }
                                fprintf(fs,"\n");
                }*/
            /*fprintf(fs, "_____________________________________\n");*/
                }
}

float ValMaxCol( int rowpvt, int n, float vec[DIM]){
                float pvtmax;
                int i,rmax,j;
                rmax=rowpvt;
                pvtmax=fabs(vec[rowpvt]);
                for (i=(rowpvt+1);i<=n;i++){
                                if ((fabs(vec[i]))>pvtmax){
                                        pvtmax=fabs(vec[i]);
                                        rmax=i;
                        }
                        }
                /*fprintf(fs,"\n___MATRIZ PIVOTEADA EN LA COLUMNA N°%d___\n",rowpvt);*/
                /*for(i=1;i<=n;i++){
                        fprintf(fs,"\t x%d",i);
                        }*/
                        /*fprintf(fs,"\t b");
                        fprintf(fs,"\n");*/
                        /*for(i=1;i<=n;i++){
                                fprintf(fs, " Ec.%i=\t",i);
                                        for(j=1;j<=n+1;j++){
                                                fprintf(fs,"%.2f\t",C[i][j]);
                                        }
                        fprintf(fs,"\n");
                        }*/
        return (rmax);
```

```
}

void pivoteo(int n, float C[DIM][DIM], int rowpvt, int rmax){
        int j,i;
        float temp;
                for(j=1;j<=n+1;j++){
                        temp= C[rowpvt][j];
                        C[rowpvt][j]=C[rmax][j];
                        C[rmax][j]=temp;
                }
}

void comprueba(int n, float A[DIM][DIM]){
        int i,j;
        float suma;
                /*fprintf(fs,"\n___________RESULTADOS__________\n\n");*/
                    for(i=1;i<=n;i++){
                        /*fprintf(fs,"  x%d=(%.2f)",i,C[i][n+1]);*/
                        }
                /*fprintf(fs,"\n");
                fprintf(fs, "_______________________________\n");*/
                        for(j=1;j<=n;j++){
                                suma=0;
                                /*fprintf(fs,"\n___________COMPROBACION DE LA ECUACION N°%d___________\n\n",j);
                                        for (i=1;i<=n;i++){
                                                fprintf(fs," = [(%.2f) * (x%d)]",A[j][i],i);
                                        }*/
                /*fprintf(fs," = %.2f",A[j][n+1]);
                fprintf(fs,"\n");*/
                        /*for (i=1;i<=n;i++){
                                fprintf(fs," = [(%.2f) * (%.2f)]",A[j][i],C[i][n+1]);
                        }*/
                /*fprintf(fs," = %.2f",A[j][n+1]);
                fprintf(fs,"\n");*/
                        for (i=1;i<=n;i++){
                                /*fprintf(fs," = %.2f",A[j][i]*C[i][n+1]);*/
                                suma=suma+A[j][i]*C[i][n+1];
                        }
                /*fprintf(fs," = %.2f",A[j][n+1]);
                fprintf(fs,"\n");
                fprintf(fs," %.2f = %.2f",suma,A[j][n+1]);
                fprintf(fs,"\n");
                fprintf(fs, "______________________________________________________\n\n");*/
                        }
}

void regresion(int n, float x[DIM], float y[DIM]){
        sr=0;
        st=0;
        fprintf(fs,"Punto\t     x\t            y\t           x2\t            xy\t            YY\t            delta\t   delta2\t
beta\t   beta2\t\n");
        Ymedia = sumy/n;
        for(i=1; i<=n; i++){
                delta[i] = y[i] - YY[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
```

No se necesitaba

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```
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], x2[i], xy[i], YY[i], delta[i], 
delta2[i], beta[i], beta2[i]);
        }

        YYint  = a0 + a1*xint;
        YYext  = a0 + a1*xext;
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma    %f\t %f\t %f\t %f\t\n\n", sumx, sumy, sumx2, sumxy);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t\n\n",a0, a1);
        fprintf(fs,"ECUACIÓN DE AJUSTE LINEAL: Y= %f + %fx\n\n", a0, a1);
        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n", 
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);
}

//MÉTODO DE AJUSTE PARABÓLICO
void parabolico(int n, float x[DIM], float y[DIM]){
        /*float sumx, sumx2, sumx3, sumx4, sumy, sumxy, sumx2y, x2[DIM], x3[DIM], x4[DIM], xy[DIM], x2y[DIM], sr, st, Ymedia, 
desest, destip, coefdet, coefcor;
        float a[DIM][DIM], YY[DIM], delta[DIM], delta2[DIM], beta[DIM], beta2[DIM];*/
        sumx   = 0;
        sumx2  = 0;
        sumx3  = 0;
        sumx4  = 0;
        sumy   = 0;
        sumxy  = 0;
        sumx2y = 0;

        for(i=1; i<= n; i++){
         x2[i] = x[i]*x[i];
         x3[i] = x[i]*x[i]*x[i];
         x4[i] = x[i]*x[i]*x[i]*x[i];
         xy[i] = x[i]  * y[i];
         x2y[i]= x2[i]  * y[i];

         sumx   = sumx   + x[i];
         sumx2  = sumx2  + x2[i];
         sumx3  = sumx3  + x3[i];
         sumx4  = sumx4  + x4[i];
         sumy   = sumy   + y[i];
         sumxy  = sumxy  + xy[i];
         sumx2y= sumx2y+ x2y[i];
        }

        Ymedia = sumy/n;
```

AE1_CD4_I1

AE1_CD4_I1

```
        a[1][1] = n ; a[1][2] = sumx ; a[1][3]= sumx2; a[1][4] = sumy;
        a[2][1] = sumx; a[2][2]= sumx2; a[2][3]= sumx3; a[2][4] = sumxy;
        a[3][1] = sumx2; a[3][2]= sumx3; a[3][3]= sumx4; a[3][4]= sumx2y;

        GaussJordan(3, a);

        sr=0;
        st=0;

        fprintf(fs,"Punto\t      x\t             y\t           xy\t            x2\t            x3\t            x4\t            x2y\t
         YY\t            delta\t  delta2\t    beta\t    beta2\t\n");
        for(i=1; i<=n; i++){
                YY[i] = a0 + a1*x[i] + a2*(x[i]*x[i]);
                delta[i] = y[i] - YY[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], xy[i], x2[i],
x3[i], x4[i], x2y[i], YY[i], delta[i], delta2[i], beta[i], beta2[i]);
        }

        YYint  = a0 + a1*xint + a2*(xint*xint);
        YYext  = a0 + a1*xext + a2*(xext*xext);
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma     %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n\n", sumx, sumy, sumxy, sumx2, sumx3, sumx4, sumx2y);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t a2= %f\t\n\n",a0, a1, a2);
        fprintf(fs,"ECUACIÓN DE AJUSTE PARABOLICO: Y= %f + %fx + %fx^2\n\n", a0, a1, a2);
        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);

}

//MÉTODO DE AUSTE CÚBICO
void cubico(int n, float x[DIM], float y[DIM]){
        /*float sumx, sumx2, sumx3, sumx4, sumy, sumxy, sumx2y, x2[DIM], x3[DIM], x4[DIM], xy[DIM], x2y[DIM], sr, st, Ymedia,
desest, destip, coefdet, coefcor;
        float a[DIM][DIM], YY[DIM], delta[DIM], delta2[DIM], beta[DIM], beta2[DIM];*/
        sumx   = 0;
        sumx2  = 0;
        sumx3  = 0;
        sumy   = 0;
        sumxy  = 0;
        sumx2y = 0;
        sumx3y = 0;
```

AE1_CD4_I1

AE1_CD4_I1

```
        sumx4  = 0;
        sumx5  = 0;
        sumx6  = 0;

        for(i=1; i<= n; i++){
         x2[i] = x[i]*x[i];
         x3[i] = x[i]*x[i]*x[i];
         x4[i] = x[i]*x[i]*x[i]*x[i];
         xy[i] = x[i]  * y[i];
         x2y[i]= x2[i] * y[i];
         x3y[i]= x3[i] * y[i];
         x5[i]= x[i]*x[i]*x[i]*x[i]*x[i];
         x6[i]= x[i]*x[i]*x[i]*x[i]*x[i]*x[i];

         sumx  = sumx  + x[i];
         sumx2 = sumx2 + x2[i];
         sumx3 = sumx3 + x3[i];
         sumx4 = sumx4 + x4[i];
         sumy  = sumy  + y[i];
         sumxy = sumxy + xy[i];
         sumx2y= sumx2y+ x2y[i];
         sumx3y= sumx3y+ x3y[i];
         sumx5 = sumx5 + x5[i];
         sumx6 = sumx6 + x6[i];
        }

        Ymedia = sumy/n;

        a[1][1] = n ; a[1][2] = sumx ; a[1][3]= sumx2; a[1][4]= sumx3; a[1][5] = sumy;
        a[2][1] = sumx; a[2][2]= sumx2; a[2][3]= sumx3; a[2][4]= sumx4; a[2][5] = sumxy;
        a[3][1] = sumx2; a[3][2]= sumx3; a[3][3]= sumx4; a[3][4]= sumx5; a[3][5]= sumx2y;
        a[4][1] = sumx3; a[4][2]= sumx4; a[4][3]= sumx5; a[4][4]= sumx6; a[4][5]= sumx3y;

        GaussJordan(4, a);

        sr=0;
        st=0;

        fprintf(fs,"Punto\t     x\t              y\t             xy\t           x2\t         x2y\t              x3\t         x3y\t
x4\t        x5\t         x6\t         YY\t             delta\t  delta2\t    beta\t   beta2\t\n");
        for(i=1; i<=n; i++){
                YY[i] = a0 + a1*x[i] + a2*(x[i]*x[i]) + a3*(x[i]*x[i]*x[i]);
                delta[i] = y[i] - YY[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i],
xy[i], x2[i], x2y[i], x3[i], x3y[i], x4[i], x5[i], x6[i], YY[i], delta[i], delta2[i], beta[i], beta2[i]);
        }

        YYint  = a0 + a1*xint + a2*(xint*xint) + a3*(xint*xint*xint);
        YYext  = a0 + a1*xext + a2*(xext*xext) + a3*(xext*xext*xext);
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
```

AE1_CD4_I1

```
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma     %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n\n", sumx, sumy, sumxy, sumx2, sumx2y, sumx3,
sumx3y, sumx4, sumx5, sumx6);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t a2= %f\t a3= %f\t\n\n",a0, a1, a2, a3);
        fprintf(fs,"ECUACIÓN DE AJUSTE CÚBICO: Y= %f + %fx + %fx^2 + %fx^3\n\n", a0, a1, a2, a3);
        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);

}

//MÉTODO DE AJUSTE EXPONENCIAL
void exponencial(int n, float x[DIM], float y[DIM]){
        float z[DIM], A, B,sumz;
        sumz=0;

        for(i=1; i<=n; i++){
                sumz=sumz+y[i];
                z[i] = log(y[i]);
        }

        lineal(n, x, z);

        Ymedia = sumz/n;

        for(i=1; i<=n; i++){
                ZZ[i]=exp(YY[i]);
        }

        sr=0;
        st=0;
        fprintf(fs,"Punto\t      x\t             y\t        z=lny\t          x2\t             xz\t        YY\t          ZZ\t
delta\t  delta2\t    beta\t   beta2\t\n");
        for(i=1; i<=n; i++){
                delta[i] = y[i] - ZZ[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], z[i], x2[i], xy[i],
YY[i], ZZ[i], delta[i], delta2[i], beta[i], beta2[i]);
        }
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma    %f\t %f\t %f\t %f\t %f\t\n\n", sumx, sumz, sumy, sumx2, sumxy);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
```

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```
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t\n\n",a0, a1);
        fprintf(fs,"ECUACIÓN DE AJUSTE LINEAL: Y= %f + %fx\n\n", a0, a1);

        A=exp(a0);
        B=a1;
        YYint  = A*exp(B*xint);
        YYext  = A*exp(B*xext);
        fprintf(fs,"\na0= lnA= %f= lnA ;\t A= e^a0 = e^%f= %f\n", a0, a0, A);
        fprintf(fs,"a1= B= Pendiente= %f\n\n", a1);
        fprintf(fs,"\nECUACIÓN DE AJUSTE EXPONENCIAL= Z= %f*e^(%f*x)\n\n", A, B);

        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);
}

//MÉTODO DE AJUSTE DE POTENCIAS
void potencias(int n, float x[DIM], float y[DIM]){
        float z[DIM], w[DIM], A, B,sumz, sumx1;
        sumz=0;
        sumx1=0;

        for(i=1; i<=n; i++){
                sumz=sumz + y[i];
                sumx1 = sumx1 + x[i];
                w[i] = log10(x[i]);
                z[i] = log10(y[i]);
        }

        lineal(n, w, z);

        Ymedia = sumz/n;

        for(i=1; i<=n; i++){
                ZZ[i]=pow(10, YY[i]);
        }

        sr=0;
        st=0;
        fprintf(fs,"Punto\t     x\t              y\t         w=logx\t            z=logy\t          w2\t          wz\t        YY\t
    ZZ\t            delta\t  delta2\t     beta\t   beta2\t\n");
        for(i=1; i<=n; i++){
                delta[i] = y[i] - ZZ[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], w[i], z[i],
x2[i], xy[i], YY[i], ZZ[i], delta[i], delta2[i], beta[i], beta2[i]);
        }
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
```

AE1_CD4_I1

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```
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma    %f\t %f\t %f\t %f\t %f\t %f\t\n\n", sumx1, sumz, sumx, sumy, sumx2, sumxy);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t\n\n",a0, a1);
        fprintf(fs,"ECUACIÓN DE AJUSTE LINEAL: Y= %f + %fx\n\n", a0, a1);

        A=pow(10, a0);
        B=a1;
        YYint  = A*pow(xint, B);
        YYext  = A*pow(xext, B);
        fprintf(fs,"\na0= logA= %f= logA ;\t A= 10^a0 = 10^%f= %f\n", a0, a0, A);
        fprintf(fs,"a1= B= Pendiente= %f\n\n", a1);
        fprintf(fs,"\nECUACIÓN DE AJUSTE DE POTENCIAS= Z= %f*x^(%f)\n\n", A, B);

        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);
}

//MÉTODO DE AJUSTE DE CRECIMIENTO
void crecimiento(int n,float x[DIM], float y[DIM]){
        float z[DIM], v[DIM], A, B,sumz, sumx1;
        sumz=0;
        sumx1=0;

        for(i=1; i<=n; i++){
                sumz=sumz + y[i];
                sumx1 = sumx1 + x[i];
                v[i] = 1/(x[i]);
                z[i] = 1/(y[i]);
        }

        lineal(n, v, z);

        Ymedia = sumz/n;

        for(i=1; i<=n; i++){
                zz[i]=1/(YY[i]);
        }

        sr=0;
        st=0;
        fprintf(fs,"Punto\t     x\t            y\t       v=1/x\t      z=1/y\t          v2\t            vz\t       YY\t
zz\t            delta\t  delta2\t     beta\t    beta2\t\n");
        for(i=1; i<=n; i++){
                delta[i] = y[i] - zz[i];
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
```

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```
		fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], v[i], z[i],
x2[i], xy[i], YY[i], ZZ[i], delta[i], delta2[i], beta[i], beta2[i]);
	}
	desest = sqrt(sr/(n-2));
	destip = sqrt(st/(n-1));
	coefdet= (st-sr)/st;
	coefcor= sqrt(coefdet);

	fprintf(fs,"Suma    %f\t %f\t %f\t %f\t %f\t %f\t\n\n", sumx1, sumz, sumx, sumy, sumx2, sumxy);
	fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
	fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
	fprintf(fs,"a0= %f\t a1= %f\t\n\n",a0, a1);
	fprintf(fs,"ECUACIÓN DE AJUSTE LINEAL: Y= %f + %fx\n\n", a0, a1);

	A=1/a0;
	B=a1*A;
	YYint  = A*(xint/(B + xint));
	YYext  = A*(xext/(B + xext));
	fprintf(fs,"\na0= 1/A= %f=1/A ;\t A= 1/a0 = 1/%f= %f\n", a0, a0, A);
	fprintf(fs,"a1= B/A ;\t B= a1A= %f*%f= %f\n\n", a1, A, B);
	fprintf(fs,"\nECUACIÓN DE AJUSTE DE CRECIMIENTO= Z= %f*(x/(%f + x))\n\n", A, B);

	fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
	fprintf(fs,"PRONOSTICOS:\n");
	fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
	fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);
}
```

AE1_CD4_I1

```
//MÉTODO DE AJUSTE DE GOWPETZ
void Gowpetz(int n,float x[DIM], float y[DIM]){
	float z[DIM], u[DIM], A, B,sumz, sumx1;
	sumz=0;
	sumx1=0;

	for(i=1; i<=n; i++){
		sumz=sumz + y[i];
		sumx1 = sumx1 + x[i];
		u[i] = exp(x[i]);
		z[i] = log(y[i]);
	}

	lineal(n, u, z);

	Ymedia = sumz/n;

	for(i=1; i<=n; i++){
		ZZ[i]=exp(YY[i]);
	}

	sr=0;
	st=0;
	fprintf(fs,"Punto\t     x\t          y\t      u=e^x\t      z=lny\t         u2\t            uz\t        YY\t
ZZ\t            delta\t  delta2\t     beta\t   beta2\t\n");
	for(i=1; i<=n; i++){
		delta[i] = y[i] - ZZ[i];
```

AE1_CD4_I1

```
                delta2[i] = delta[i]*delta[i];
                beta[i] = y[i]-Ymedia;
                beta2[i]= beta[i]*beta[i];
                sr = sr + delta2[i];
                st = st + beta2[i];
                fprintf(fs,"%d\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t %f\t\n",i, x[i], y[i], u[i], z[i],
x2[i], xy[i], YY[i], ZZ[i], delta[i], delta2[i], beta[i], beta2[i]);
        }
        desest = sqrt(sr/(n-2));
        destip = sqrt(st/(n-1));
        coefdet= (st-sr)/st;
        coefcor= sqrt(coefdet);

        fprintf(fs,"Suma    %f\t %f\t %f\t %f\t %f\t %f\t\n\n", sumx1, sumz, sumx, sumy, sumx2, sumxy);
        fprintf(fs,"Sr= %f\t St= %f\t\n\n",sr, st);
        fprintf(fs,"Ymedia= %f\t\n\n", Ymedia);
        fprintf(fs,"a0= %f\t a1= %f\t\n\n",a0, a1);
        fprintf(fs,"ECUACIÓN DE AJUSTE LINEAL: Y= %f + %fx\n\n", a0, a1);

        A=exp(a0);
        B=exp(a1);
        YYint  = A*pow(B, exp(xint));
        YYext  = A*pow(B, exp(xext));
        fprintf(fs,"\na0= lnA= %f=lnA ;\t A= e^a0 = e^(%f)= %f\n", a0, a0, A);
        fprintf(fs,"\na1= lnB= %f=lnB ;\t B= e^a1 = e^(%f)= %f\n", a1, a1, B);
        fprintf(fs,"\nECUACIÓN DE AJUSTE DE GOWPETZ = Z= %f*%f^(e^x)\n\n", A, B);

        fprintf(fs,"Desv. del Estimado= %f\t Desv. Estandar= %f\t Coef. Determinación= %f\t Coef. Correlación= %f\t\n\n",
desest, destip, coefdet, coefcor);
        fprintf(fs,"PRONOSTICOS:\n");
        fprintf(fs,"Xint= %f\t Yint= %f\t\n", xint, YYint);
        fprintf(fs,"Xext= %f\t Yext= %f\t\n", xext, YYext);
}
```

AE1_CD4_I1

```
Cervantes Chavez Sofía
De Jesús Monroy O. Imannol
Terrones Quiroz Diana

 Datos Recibidos:
    x                  y
 1.000000          6.300000
 2.000000          16.549999
 3.000000          26.400000
 4.000000          35.000000
 5.000000          42.500000
 6.000000          48.757999
 7.000000          57.858002
 8.000000          65.000000
 9.000000          73.519997
 10.000000         79.320000
 11.000000         84.570000
 12.000000         90.000000
 13.000000         94.800003
 14.000000         100.050003
 15.000000         106.050003
 17.000000         110.000000
 18.000000         103.750000
 19.000000         107.849998
 20.000000         111.070000
 21.000000         115.000000
 22.000000         117.500000
 23.000000         119.349998
 24.000000         122.449997
 25.000000         125.000000
 26.000000         128.300003
 27.000000         130.800003
 28.000000         132.750000
 29.000000         135.000000
 30.000000         138.199997
 31.000000         140.800003
 32.000000         143.300003
 33.000000         145.000000
 34.000000         147.500000
___________________________________________________MÉTODO DE AJUSTE LINEAL___________________________________________________
_____________________________________________________________________________________________________________________________
Punto      x           y            x2            xy            YY          delta        delta2        beta         beta2
1        1.000000    6.300000     1.000000      6.300000      34.040073   -27.740074   769.511719   -90.678658   8222.619141
2        2.000000    16.549999    4.000000      33.099998     37.844055   -21.294056   453.436829   -80.428665   6468.770020
3        3.000000    26.400000    9.000000      79.199997     41.648033   -15.248034   232.502533   -70.578659   4981.347168
4        4.000000    35.000000    16.000000     140.000000    45.452015   -10.452015   109.244614   -61.978661   3841.354248
5        5.000000    42.500000    25.000000     212.500000    49.255997   -6.755997    45.643490    -54.478661   2967.924561
6        6.000000    48.757999    36.000000     292.548004    53.059978   -4.301979    18.507025    -48.220661   2325.232178
7        7.000000    57.858002    49.000000     405.006012    56.863960   0.994041     0.988118     -39.120659   1530.425903
8        8.000000    65.000000    64.000000     520.000000    60.667938   4.332062     18.766760    -31.978661   1022.634705
9        9.000000    73.519997    81.000000     661.679993    64.471924   9.048073     81.867622    -23.458664   550.308899
10       10.000000   79.320000    100.000000    793.200012    68.275902   11.044098    121.972099   -17.658661   311.828308
11       11.000000   84.570000    121.000000    930.270020    72.079880   12.490120    156.003098   -12.408661   153.974869
12       12.000000   90.000000    144.000000    1080.000000   75.883865   14.116135    199.265259   -6.978661    48.701702
13       13.000000   94.800003    169.000000    1232.400024   79.687843   15.112160    228.377365   -2.178658    4.746549
14       14.000000   100.050003   196.000000    1400.700073   83.491829   16.558174    274.173126   3.071342     9.433145
15       15.000000   106.050003   225.000000    1590.750000   87.295807   18.754196    351.719879   9.071342     82.289253
16       17.000000   110.000000   289.000000    1870.000000   94.903770   15.096230    227.896149   13.021339    169.555283
17       18.000000   103.750000   324.000000    1867.500000   98.707748   5.042252     25.424301    6.771339     45.851036
18       19.000000   107.849998   361.000000    2049.149902   102.511734  5.338264     28.497068    10.871338    118.185989
19       20.000000   111.070000   400.000000    2221.399902   106.315712  4.754288     22.603252    14.091339    198.565842
20       21.000000   115.000000   441.000000    2415.000000   110.119698  4.880302     23.817352    18.021339    324.768677
21       22.000000   117.500000   484.000000    2585.000000   113.923676  3.576324     12.790096    20.521339    421.125366
22       23.000000   119.349998   529.000000    2745.050049   117.727654  1.622345     2.632003     22.371338    500.476746
23       24.000000   122.449997   576.000000    2938.799805   121.531639  0.918358     0.843381     25.471336    648.789001
24       25.000000   125.000000   625.000000    3125.000000   125.335617  -0.335617    0.112639     28.021339    785.195435
25       26.000000   128.300003   676.000000    3335.800049   129.139603  -0.839600    0.704928     31.321342    981.026489
26       27.000000   130.800003   729.000000    3531.600098   132.943573  -2.143570    4.594892     33.821342    1143.883179
27       28.000000   132.750000   784.000000    3717.000000   136.747559  -3.997559    15.980474    35.771339    1279.588745
28       29.000000   135.000000   841.000000    3915.000000   140.551544  -5.551544    30.819643    38.021339    1445.622192
29       30.000000   138.199997   900.000000    4146.000000   144.355530  -6.155533    37.890583    41.221336    1699.198608
30       31.000000   140.800003   961.000000    4364.800293   148.159500  -7.359497    54.162197    43.821342    1920.310059
31       32.000000   143.300003   1024.000000   4585.600098   151.963486  -8.663483    75.055931    46.321342    2145.666748
32       33.000000   145.000000   1089.000000   4785.000000   155.767471  -10.767471   115.938438   48.021339    2306.049072
33       34.000000   147.500000   1156.000000   5015.000000   159.571442  -12.071442   145.719696   50.521339    2552.405762
Suma    579.000000   3200.295898  13429.000000  68590.359375

Sr= 3887.462402  St= 51207.855469

Ymedia= 96.978661
```

ECUACIÓN DE AJUSTE LINEAL: Y= 30.236092 + 3.803981x

Desv. del Estimado= 11.198304   Desv. Estandar= 40.003067   Coef. Determinación= 0.924085   Coef. Correlación= 0.961293

PRONOSTICOS:
Xint= 16.000000 Yint= 91.099792
Xext= 40.000000 Yext= 182.395340

MÉTODO DE AJUSTE PARÁBOLICO

Punto	x	y	xy	x2	x3	x4	x2y	YY	delta	delta2	beta	beta2
1	1.000000	6.300000	6.300000	1.000000	1.000000	1.000000	6.300000	14.660021	-8.360021	69.889946	-90.678658	8222.619141
2	2.000000	16.549999	33.099998	4.000000	8.000000	16.000000	66.199997	22.055899	-5.505899	30.314928	-80.428665	6468.770020
3	3.000000	26.400000	79.199997	9.000000	27.000000	81.000000	237.599991	29.226971	-2.826971	7.991765	-70.578659	4981.347168
4	4.000000	35.000000	140.000000	16.000000	64.000000	256.000000	560.000000	36.173237	-1.173237	1.376485	-61.978661	3841.354248
5	5.000000	42.500000	212.500000	25.000000	125.000000	625.000000	1062.500000	42.894699	-0.394699	0.155787	-54.478661	2967.924561
6	6.000000	48.757999	292.548004	36.000000	216.000000	1296.000000	1755.287964	49.391354	-0.633354	0.401138	-48.220661	2325.232178
7	7.000000	57.858002	405.006012	49.000000	343.000000	2401.000000	2835.041992	55.663200	2.194801	4.817153	-39.120659	1530.425903
8	8.000000	65.000000	520.000000	64.000000	512.000000	4096.000000	4160.000000	61.710243	3.289757	10.822499	-31.978661	1022.634705
9	9.000000	73.519997	661.679993	81.000000	729.000000	6561.000000	5955.119629	67.532478	5.987518	35.850376	-23.458664	550.308899
10	10.000000	79.320000	793.200012	100.000000	1000.000000	10000.000000	7932.000000	73.129913	6.190086	38.317169	-17.658661	311.828308
11	11.000000	84.570000	930.270020	121.000000	1331.000000	14641.000000	10232.969727	78.502541	6.067459	36.814060	-12.408661	153.974869
12	12.000000	90.000000	1080.000000	144.000000	1728.000000	20736.000000	12960.000000	83.650360	6.349640	40.317928	-6.978661	48.701702
13	13.000000	94.800003	1232.400024	169.000000	2197.000000	28561.000000	16021.200195	88.573372	6.226631	38.770935	-2.178658	4.746549
14	14.000000	100.050003	1400.700073	196.000000	2744.000000	38416.000000	19609.800781	93.271584	6.778419	45.946972	3.071342	9.433145
15	15.000000	106.050003	1590.750000	225.000000	3375.000000	50625.000000	23861.250000	97.744987	8.305016	68.973282	9.071342	82.289253
16	17.000000	110.000000	1870.000000	289.000000	4913.000000	83521.000000	31790.000000	106.017372	3.982628	15.861324	13.021339	169.555283
17	18.000000	103.750000	1867.500000	324.000000	5832.000000	104976.000000	33615.000000	109.816360	-6.066360	36.800728	6.771339	45.851036
18	19.000000	107.849998	2049.149902	361.000000	6859.000000	130321.000000	38933.847656	113.390541	-5.540543	30.697613	10.871338	118.185989
19	20.000000	111.070000	2221.399902	400.000000	8000.000000	160000.000000	44428.000000	116.739914	-5.669914	32.147926	14.091339	198.565842
20	21.000000	115.000000	2415.000000	441.000000	9261.000000	194481.000000	50715.000000	119.864479	-4.864479	23.663157	18.021339	324.768677
21	22.000000	117.500000	2585.000000	484.000000	10648.000000	234256.000000	56870.000000	122.764244	-5.264244	27.712265	20.521339	421.125366
22	23.000000	119.349998	2745.050049	529.000000	12167.000000	279841.000000	63136.148438	125.439201	-6.089203	37.078392	22.371338	500.476746
23	24.000000	122.449997	2938.799805	576.000000	13824.000000	331776.000000	70531.195313	127.889351	-5.439354	29.586571	25.471336	648.789001
24	25.000000	125.000000	3125.000000	625.000000	15625.000000	390625.000000	78125.000000	130.114700	-5.114700	26.160160	28.021339	785.195435
25	26.000000	128.300003	3335.800049	676.000000	17576.000000	456976.000000	86730.804688	132.115234	-3.815231	14.555990	31.321342	981.026489
26	27.000000	130.800003	3531.600098	729.000000	19683.000000	531441.000000	95353.203125	133.890961	-3.090958	9.554019	33.821342	1143.883179
27	28.000000	132.750000	3717.000000	784.000000	21952.000000	614656.000000	104076.000000	135.441895	-2.691895	7.246296	35.771339	1279.588745
28	29.000000	135.000000	3915.000000	841.000000	24389.000000	707281.000000	113535.000000	136.768021	-1.768021	3.125897	38.021339	1445.622192
29	30.000000	138.199997	4146.000000	900.000000	27000.000000	810000.000000	124380.000000	137.869324	0.330673	0.109345	41.221336	1699.198608
30	31.000000	140.800003	4364.800293	961.000000	29791.000000	923521.000000	135308.796875	138.745834	2.054169	4.219609	43.821342	1920.310059
31	32.000000	143.300003	4585.600098	1024.000000	32768.000000	1048576.000000	146739.203125	139.397552	3.902451	15.229120	46.321342	2145.666748
32	33.000000	145.000000	4785.000000	1089.000000	35937.000000	1185921.000000	157905.000000	139.824448	5.175552	26.786343	48.021339	2306.049072
33	34.000000	147.500000	5015.000000	1156.000000	39304.000000	1336336.000000	170510.000000	140.026535	7.473465	55.852680	50.521339	2552.405762
Suma	579.000000	3200.295898	68590.359375	13429.000000	349929.000000	9702817.000000	1709937.500000					

Sr= 827.147827   St= 51207.855469

Ymedia= 96.978661

a0= 7.039337   a1= 7.733087   a2= -0.112403

ECUACIÓN DE AJUSTE PARABOLICO: Y= 7.039337 + 7.733087x + -0.112403x^2

Desv. del Estimado= 5.165481   Desv. Estandar= 40.003067   Coef. Determinación= 0.983847   Coef. Correlación= 0.991891

PRONOSTICOS:
Xint= 16.000000 Yint= 101.993584
Xext= 40.000000 Yext= 136.518173

MÉTODO DE AJUSTE CUBICO

Punto	x	y	xy	x2	x2y	x3	x3y	x4	x5	x6	YY	delta	delta2	beta	beta2
1	1.000000	6.300000	6.300000	1.000000	6.300000	1.000000	6.300000	1.000000	1.000000	1.000000	4.848613	1.451387	2.106525	-90.678658	8222.619141
2	2.000000	16.549999	33.099998	4.000000	66.199997	8.000000	132.399994	16.000000	32.000000	64.000000	15.813917	0.736082	0.541817	-80.428665	6468.770020
3	3.000000	26.400000	79.199997	9.000000	237.599991	27.000000	712.799988	81.000000	243.000000	729.000000	25.998413	0.401587	0.161272	-70.578659	4981.347168
4	4.000000	35.000000	140.000000	16.000000	560.000000	64.000000	2240.000000	256.000000	1024.000000	4096.000000	35.437893	-0.437893	0.191750	-61.978661	3841.354248
5	5.000000	42.500000	212.500000	25.000000	1062.500000	125.000000	5312.500000	625.000000	3125.000000	15625.000000	44.168148	-1.668148	2.782718	-54.478661	2967.924561
6	6.000000	48.757999	292.548004	36.000000	1755.287964	216.000000	10531.727539	1296.000000	7776.000000	46656.000000	52.224972	-3.466972	12.019897	-48.220661	2325.232178
7	7.000000	57.858002	405.006012	49.000000	2835.041992	343.000000	19845.294922	2401.000000	16807.000000	117649.000000	59.644154	-1.786152	3.190339	-39.120659	1530.425903
8	8.000000	65.000000	520.000000	64.000000	4160.000000	512.000000	33280.000000	4096.000000	32768.000000	262144.000000	66.461487	-1.461487	2.135944	-31.978661	1022.634705
9	9.000000	73.519997	661.679993	81.000000	5955.119629	729.000000	53596.078125	6561.000000	59049.000000	531441.000000	72.712769	0.807228	0.651617	-23.458664	550.308899
10	10.000000	79.320000	793.200012	100.000000	7932.000000	1000.000000	79320.000000	10000.000000	100000.000000	1000000.000000	78.433784	0.886215	0.785377	-17.658661	311.828308
11	11.000000	84.570000	930.270020	121.000000	10232.969727	1331.000000	112562.671875	14641.000000	161051.000000	1771561.000000	83.660332	0.909668	0.827496	-12.408661	153.974869
12	12.000000	90.000000	1080.000000	144.000000	12960.000000	1728.000000	155520.000000	20736.000000	248832.000000	2985984.000000	88.428192	1.571808	2.470580	-6.978661	48.701702
13	13.000000	94.800003	1232.400024	169.000000	16021.200195	2197.000000	208275.609375	28561.000000	371293.000000	4826809.000000	92.773170	2.026833	4.108050	-2.178658	4.746549
14	14.000000	100.050003	1400.700073	196.000000	19609.800781	2744.000000	274537.218750	38416.000000	537824.000000	7529536.000000	96.731056	3.318947	11.015409	3.071342	9.433145
15	15.000000	106.050003	1590.750000	225.000000	23861.250000	3375.000000	357918.750000	50625.000000	759375.000000	11390625.000000	100.337631	5.712372	32.631191	9.071342	82.289253
16	17.000000	110.000000	1870.000000	289.000000	31790.000000	4913.000000	540430.000000	83521.000000	1419857.000000	24137568.000000	106.640053	3.359947	11.289246	13.021339	169.555283
17	18.000000	103.750000	1867.500000	324.000000	33615.000000	5832.000000	605070.000000	104976.000000	1889568.000000	34012224.000000	109.407471	-5.657471	32.006973	6.771339	45.851036
18	19.000000	107.849998	2049.149902	361.000000	38933.847656	6859.000000	739743.125000	130321.000000	2476099.000000	47045880.000000	111.966759	-4.116760	16.947716	10.871338	118.185989
19	20.000000	111.070000	2221.399902	400.000000	44428.000000	8000.000000	888560.000000	160000.000000	3200000.000000	64000000.000000	114.353706	-3.283707	10.782729	14.091339	198.565842

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20      21.000000      115.000000     2415.000000    441.000000     50715.000000     9261.000000     1065015.000000    194481.000000    4084101.000000    85766120.000000  116.604095   -1.604095    2.573122    18.021339    324.768677
21      22.000000      117.500000     2585.000000    484.000000     56870.000000     10648.000000    1251140.000000    234256.000000    5153632.000000    113379904.000000 118.753731   -1.253731    1.571841    20.521339    421.125366
22      23.000000      119.349998     2745.050049    529.000000     63136.148438     12167.000000    1452131.375000    279841.000000    6436343.000000    148035888.000000 120.838402   -1.488403    2.215344    22.371338    500.476746
23      24.000000      122.449997     2938.799805    576.000000     70531.195313     13824.000000    1692748.750000    331776.000000    7962624.000000    191102976.000000 122.893898   -0.443901    0.197048    25.471336    648.789001
24      25.000000      125.000000     3125.000000    625.000000     78125.000000     15625.000000    1953125.000000    390625.000000    9765625.000000    244140624.000000 124.956009   0.043991     0.001935    28.021339    785.195435
25      26.000000      128.300003     3335.800049    676.000000     86730.804688     17576.000000    2255000.750000    456976.000000    11881376.000000   308915776.000000 127.060532   1.239471     1.536289    31.321342    981.026489
26      27.000000      130.800003     3531.600098    729.000000     95353.203125     19683.000000    2574536.500000    531441.000000    14348907.000000   387420480.000000 129.243256   1.556747     2.423463    33.821342    1143.883179
27      28.000000      132.750000     3717.000000    784.000000     104076.000000    21952.000000    2914128.000000    614656.000000    17210368.000000   481890304.000000 131.539978   1.210022     1.464153    35.771339    1279.588745
28      29.000000      135.000000     3915.000000    841.000000     113535.000000    24389.000000    3292515.000000    707281.000000    20511148.000000   594823296.000000 133.986481   1.013519     1.027221    38.021339    1445.622192
29      30.000000      138.199997     4146.000000    900.000000     124380.000000    27000.000000    3731400.000000    810000.000000    24300000.000000   729000000.000000 136.618561   1.581436     2.500940    41.221336    1699.198608
30      31.000000      140.800003     4364.800293    961.000000     135308.796875    29791.000000    4194573.000000    923521.000000    28629152.000000   887503680.000000 139.472015   1.327988     1.763551    43.821342    1920.310059
31      32.000000      143.300003     4585.600098    1024.000000    146739.203125    32768.000000    4695654.500000    1048576.000000   33554432.000000   1073741824.00000 142.582642   0.717361     0.514607    46.321342    2145.666748
32      33.000000      145.000000     4785.000000    1089.000000    157905.000000    35937.000000    5210865.000000    1185921.000000   39135392.000000   1291468032.00000 145.986206   -0.986206    0.972602    48.021339    2306.049072
33      34.000000      147.500000     5015.000000    1156.000000    170510.000000    39304.000000    5797340.000000    1336336.000000   45435424.000000   1544804352.00000 149.718521   -2.218521    4.921836    50.521339    2552.405762
Suma    579.000000     3200.295898    68590.359375   13429.000000   1709937.500000   349929.000000   46167768.000000   9702817.000000   279693248.00000   8281671680.00000

Sr= 170.330597   St= 51207.855469

Ymedia= 96.978661

a0= -6.933292    a1= 12.202136    a2= -0.426196    a3= 0.005965

ECUACIÓN DE AJUSTE CÚBICO: Y= -6.933292 + 12.202136x + -0.426196x^2 + 0.005965x^3

Desv. del Estimado= 2.344043    Desv. Estandar= 40.003067       Coef. Determinación= 0.996674   Coef. Correlación= 0.998335

PRONOSTICOS:
Xint= 16.000000  Yint= 103.628700
Xext= 40.000000  Yext= 181.020477


______________________________MÉTODO DE AJUSTE EXPONENCIAL______________________________________________________________________________________
______________________________________________________________________________________________________________________________________________
Punto       x              y              z=lny          x2             xz             YY             ZZ             delta          delta2         beta           beta2
1       1.000000       6.300000       1.840550       1.000000       1.840550       3.482080       32.527325      -26.227325     687.872620     -90.678658     8222.619141
2       2.000000       16.549999      2.806386       4.000000       5.612772       3.538604       34.418819      -17.868820     319.294739     -80.428665     6468.770020
3       3.000000       26.400000      3.273364       9.000000       9.820092       3.595127       36.420311      -10.020311     100.406639     -70.578659     4981.347168
4       4.000000       35.000000      3.555348       16.000000      14.221393      3.651650       38.538200      -3.538200      12.518862      -61.978661     3841.354248
5       5.000000       42.500000      3.749504       25.000000      18.747520      3.708173       40.779247      1.720753       2.960990       -54.478661     2967.924561
6       6.000000       48.757999      3.886869       36.000000      23.321215      3.764696       43.150600      5.607399       31.442923      -48.220661     2325.232178
7       7.000000       57.858002      4.057992       49.000000      28.405945      3.821219       45.659855      12.198147      148.794785     -39.120659     1530.425903
8       8.000000       65.000000      4.174387       64.000000      33.395100      3.877743       48.315033      16.684967      278.388123     -31.978661     1022.634705
9       9.000000       73.519997      4.297557       81.000000      38.678017      3.934266       51.124615      22.395382      501.553131     -23.458664     550.308899
10      10.000000      79.320000      4.373490       100.000000     43.734901      3.990789       54.097565      25.222435      636.171204     -17.658661     311.828308
11      11.000000      84.570000      4.437580       121.000000     48.813377      4.047312       57.243393      27.326607      746.743408     -12.408661     153.974869
12      12.000000      90.000000      4.499810       144.000000     53.997719      4.103836       60.572174      29.427826      865.996948     -6.978661      48.701702
13      13.000000      94.800003      4.551769       169.000000     59.173000      4.160359       64.094521      30.705482      942.826660     -2.178658      4.746549
14      14.000000      100.050003     4.605670       196.000000     64.479378      4.216882       67.821671      32.228333      1038.665405    3.071342       9.433145
15      15.000000      106.050003     4.663911       225.000000     69.958664      4.273405       71.765587      34.284416      1175.421143    9.071342       82.289253
16      17.000000      110.000000     4.700480       289.000000     79.908165      4.386452       80.354790      29.645210      878.838501     13.021339      169.555283
17      18.000000      103.750000     4.641984       324.000000     83.555710      4.442975       85.027527      18.722473      350.531006     6.771339       45.851036
18      19.000000      107.849998     4.680741       361.000000     88.934082      4.499498       89.971947      17.878052      319.624725     10.871338      118.185989
19      20.000000      111.070000     4.710161       400.000000     94.203217      4.556021       95.203926      15.866074      251.732285     14.091339      198.565842
20      21.000000      115.000000     4.744932       441.000000     99.643578      4.612545       100.740158     14.259842      203.343094     18.021339      324.768677
21      22.000000      117.500000     4.766438       484.000000     104.861649     4.669067       106.598282     10.901718      118.847458     20.521339      421.125366
22      23.000000      119.349998     4.782060       529.000000     109.987381     4.725591       112.797112     6.552887       42.940327      22.371338      500.476746
23      24.000000      122.449997     4.807703       576.000000     115.384857     4.782114       119.356407     3.093590       9.570298       25.471336      648.789001
24      25.000000      125.000000     4.828314       625.000000     120.707848     4.838637       126.297134     -1.297134      1.682558       28.021339      785.195435
25      26.000000      128.300003     4.854371       676.000000     126.213646     4.895161       133.641479     -5.341476      28.531370      31.321342      981.026489
26      27.000000      130.800003     4.873670       729.000000     131.589081     4.951684       141.412842     -10.612839     112.632347     33.821342      1143.883179
27      28.000000      132.750000     4.888468       784.000000     136.877106     5.008207       149.636169     -16.886169     285.142731     35.771339      1279.588745
28      29.000000      135.000000     4.905275       841.000000     142.252975     5.064730       158.337708     -23.337708     544.648621     38.021339      1445.622192
29      30.000000      138.199997     4.928702       900.000000     147.861053     5.121253       167.545181     -29.345184     861.139832     41.221336      1699.198608
30      31.000000      140.800003     4.947340       961.000000     153.367554     5.177776       177.288147     -36.488144     1331.384644    43.821342      1920.310059
31      32.000000      143.300003     4.964941       1024.000000    158.878098     5.234300       187.597672     -44.297668     1962.283447    46.321342      2145.666748
32      33.000000      145.000000     4.976734       1089.000000    164.232208     5.290823       198.506729     -53.506729     2862.969971    48.021339      2306.049072
33      34.000000      147.500000     4.993828       1156.000000    169.790161     5.347346       210.050156     -62.550156     3912.521973    50.521339      2552.405762
Suma    579.000000     3200.295898    145.770325     13429.000000   2742.447754

Sr= 21567.423828        St= 51207.855469

Ymedia= 96.978661

a0= 3.425557     a1= 0.056523

ECUACIÓN DE AJUSTE LINEAL: Y= 3.425557 + 0.056523x


a0= lnA= 3.425557= lnA ;          A= e^a0 = e^3.425557= 30.739767
a1= B= Pendiente= 0.056523
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Desv. del Estimado= 26.376568   Desv. Estandar= 40.003067      Coef. Determinación= 0.578826   Coef. Correlación= 0.760806

PRONOSTICOS:
Xint= 16.000000  Yint= 75.938850
Xext= 40.000000  Yext= 294.855469


______________________________MÉTODO DE AJUSTE DE POTENCIAS____________________________________________________________________________

Punto     x           y            w=logx       z=logy       w2           wz           YY           ZZ           delta        delta2       beta         beta2
1       1.000000     6.300000     0.000000     0.799341     0.000000     0.000000     1.036191     10.869029    -4.569029    20.876024    -90.678658   8222.619141
2       2.000000     16.549999    0.301030     1.218798     0.090619     0.366895     1.271361     18.679327    -2.129328    4.534037     -80.428665   6468.770020
3       3.000000     26.400000    0.477121     1.421604     0.227645     0.678277     1.408927     25.640535    0.759464     0.576786     -70.578659   4981.347168
4       4.000000     35.000000    0.602060     1.544068     0.362476     0.929622     1.506532     32.101971    2.898029     8.398574     -61.978661   3841.354248
5       5.000000     42.500000    0.698970     1.628389     0.488559     1.138195     1.582240     38.215508    4.284492     18.356876    -54.478661   2967.924561
6       6.000000     48.757999    0.778151     1.688046     0.605519     1.313555     1.644098     44.065384    4.692616     22.020639    -48.220661   2325.232178
7       7.000000     57.858002    0.845098     1.762363     0.714191     1.489370     1.696398     49.704723    8.153278     66.475945    -39.120659   1530.425903
8       8.000000     65.000000    0.903090     1.812913     0.815572     1.637224     1.741702     55.169899    9.830101     96.630882    -31.978661   1022.634705
9       9.000000     73.519997    0.954243     1.866405     0.910579     1.781003     1.781664     60.487209    13.032787    169.853546   -23.458664   550.308899
10      10.000000    79.320000    1.000000     1.899383     1.000000     1.899383     1.817410     65.676514    13.643486    186.144714   -17.658661   311.828308
11      11.000000    84.570000    1.041393     1.927216     1.084499     2.006989     1.849747     70.753319    13.816681    190.900665   -12.408661   153.974869
12      12.000000    90.000000    1.079181     1.954242     1.164632     2.108982     1.879268     75.730019    14.269981    203.632370   -6.978661    48.701702
13      13.000000    94.800003    1.113943     1.976808     1.240870     2.202052     1.906425     80.616676    14.183327    201.166763   -2.178658    4.746549
14      14.000000    100.050003   1.146128     2.000217     1.313609     2.292505     1.931568     85.421684    14.628319    213.987717   3.071342     9.433145
15      15.000000    106.050003   1.176091     2.025511     1.383191     2.382186     1.954976     90.152145    15.897858    252.741882   9.071342     82.289253
16      17.000000    110.000000   1.230449     2.041393     1.514005     2.511830     1.997441     99.412567    10.587433    112.093735   13.021339    169.555283
17      18.000000    103.750000   1.255273     2.015988     1.575709     2.530614     2.016834     103.952278   -0.202278    0.040916     6.771339     45.851036
18      19.000000    107.849998   1.278754     2.032820     1.635211     2.599476     2.035178     108.437111   -0.587112    0.344701     10.871338    118.185989
19      20.000000    111.070000   1.301030     2.045597     1.692679     2.661383     2.052581     112.870537   -1.800537    3.241934     14.091339    198.565842
20      21.000000    115.000000   1.322219     2.060698     1.748264     2.724694     2.069134     117.255707   -2.255707    5.088213     18.021339    324.768677
21      22.000000    117.500000   1.342423     2.070038     1.802099     2.778866     2.084917     121.595444   -4.095444    16.772659    20.521339    421.125366
22      23.000000    119.349998   1.361728     2.076823     1.854303     2.828067     2.099999     125.892235   -6.542236    42.800858    22.371338    500.476746
23      24.000000    122.449997   1.380211     2.087959     1.904983     2.881824     2.114439     130.148315   -7.698318    59.264107    25.471336    648.789001
24      25.000000    125.000000   1.397940     2.096910     1.954236     2.931355     2.128289     134.365723   -9.365723    87.716759    28.021339    785.195435
25      26.000000    128.300003   1.414973     2.108227     2.002150     2.983085     2.141595     138.546432   -10.246429   104.989319   31.321342    981.026489
26      27.000000    130.800003   1.431364     2.116608     2.048802     3.029636     2.154400     142.692078   -11.892075   141.421432   33.821342    1143.883179
27      28.000000    132.750000   1.447158     2.123034     2.094266     3.072366     2.166739     146.804214   -14.054214   197.520950   35.771339    1279.588745
28      29.000000    135.000000   1.462398     2.130334     2.138608     3.115396     2.178644     150.884430   -15.884430   252.315109   38.021339    1445.622192
29      30.000000    138.199997   1.477121     2.140508     2.181887     3.161790     2.190146     154.933899   -16.733902   280.023468   41.221336    1699.198608
30      31.000000    140.800003   1.491362     2.148603     2.224160     3.204344     2.201272     158.954025   -18.154022   329.568512   43.821342    1920.310059
31      32.000000    143.300003   1.505150     2.156246     2.265476     3.245474     2.212043     162.945755   -19.645752   385.955566   46.321342    2145.666748
32      33.000000    145.000000   1.518514     2.161368     2.305885     3.282067     2.222483     166.910309   -21.910309   480.061646   48.021339    2306.049072
33      34.000000    147.500000   1.531479     2.168792     2.345428     3.321459     2.232612     170.848694   -23.348694   545.161499   50.521339    2552.405762
Suma    579.000000   3200.295898  37.266048    63.307251    46.690113    75.089958

Sr= 4700.679199  St= 51207.855469

Ymedia= 96.978661

a0= 1.036191     a1= 0.781219

ECUACIÓN DE AJUSTE LINEAL: Y= 1.036191 + 0.781219x


a0= logA= 1.036191= logA ;      A= 10^a0 = 10^1.036191= 10.869029
a1= B= Pendiente= 0.781219


ECUACIÓN DE AJUSTE DE POTENCIAS= Z= 10.869029*x^(0.781219)

Desv. del Estimado= 12.314009   Desv. Estandar= 40.003067      Coef. Determinación= 0.908204   Coef. Correlación= 0.952997

PRONOSTICOS:
Xint= 16.000000  Yint= 94.814026
Xext= 40.000000  Yext= 193.977371


______________________________MÉTODO DE AJUSTE DE CRECIMIENTO__________________________________________________________________________

Punto     x           y            v=1/x        z=1/y        v2           vz           YY           ZZ           delta        delta2       beta         beta2
1       1.000000     6.300000     1.000000     0.158730     1.000000     0.158730     0.145519     6.871977     -0.571977    0.327158     -90.678658   8222.619141
2       2.000000     16.549999    0.500000     0.060423     0.250000     0.030211     0.072679     13.759060    2.790939     7.789342     -80.428665   6468.770020
3       3.000000     26.400000    0.333333     0.037879     0.111111     0.012626     0.048400     20.661293    5.738707     32.932755    -70.578659   4981.347168
4       4.000000     35.000000    0.250000     0.028571     0.062500     0.007143     0.036260     27.578733    7.421267     55.075199    -61.978661   3841.354248
5       5.000000     42.500000    0.200000     0.023529     0.040000     0.004706     0.028976     34.511429    7.988571     63.817268    -54.478661   2967.924561
6       6.000000     48.757999    0.166667     0.020509     0.027778     0.003418     0.024120     41.459427    7.298573     53.269161    -48.220661   2325.232178
7       7.000000     57.858002    0.142857     0.017284     0.020408     0.002469     0.020651     48.422779    9.435223     89.023422    -39.120659   1530.425903
8       8.000000     65.000000    0.125000     0.015385     0.015625     0.001923     0.018050     55.401543    9.598457     92.130386    -31.978661   1022.634705
9       9.000000     73.519997    0.111111     0.013602     0.012346     0.001511     0.016027     62.395760    11.124237    123.748650   -23.458664   550.308899
10      10.000000    79.320000    0.100000     0.012607     0.010000     0.001261     0.014408     69.405487    9.914513     98.297562    -17.658661   311.828308
```

```
12     12.000000   90.000000    0.083333   0.011111   0.006944   0.000926   0.011980   83.471672   6.528328    42.619064   -6.978661   48.701702
13     13.000000   94.800003    0.076923   0.010549   0.005917   0.000811   0.011046   90.528244   4.271759    18.247925   -2.178658   4.746549
14     14.000000   100.050003   0.071429   0.009995   0.005102   0.000714   0.010246   97.600525   2.449478    5.999943    3.071342    9.433145
15     15.000000   106.050003   0.066667   0.009430   0.004444   0.000629   0.009552   104.688576  1.361427    1.853484    9.071342    82.289253
16     17.000000   110.000000   0.058824   0.009091   0.003460   0.000535   0.008410   118.912209  -8.912209   79.427460   13.021339   169.555283
17     18.000000   103.750000   0.055556   0.009639   0.003086   0.000535   0.007933   126.047890  -22.297890  497.195892  6.771339    45.851036
18     19.000000   107.849998   0.052632   0.009272   0.002770   0.000488   0.007508   133.199539  -25.349541  642.599243  10.871338   118.185989
19     20.000000   111.070000   0.050000   0.009003   0.002500   0.000450   0.007124   140.367249  -29.297249  858.328796  14.091339   198.565842
20     21.000000   115.000000   0.047619   0.008696   0.002268   0.000414   0.006777   147.551025  -32.551025  1059.569214 18.021339   324.768677
21     22.000000   117.500000   0.045455   0.008511   0.002066   0.000387   0.006462   154.750961  -37.250961  1387.634155 20.521339   421.125366
22     23.000000   119.349998   0.043478   0.008379   0.001890   0.000364   0.006174   161.967102  -42.617104  1816.217529 22.371338   500.476746
23     24.000000   122.449997   0.041667   0.008167   0.001736   0.000340   0.005910   169.199478  -46.749481  2185.513916 25.471336   648.789001
24     25.000000   125.000000   0.040000   0.008000   0.001600   0.000320   0.005667   176.448166  -51.448166  2646.913818 28.021339   785.195435
25     26.000000   128.300003   0.038462   0.007794   0.001479   0.000300   0.005443   183.713226  -55.413223  3070.625244 31.321342   981.026489
26     27.000000   130.800003   0.037037   0.007645   0.001372   0.000283   0.005236   190.994705  -60.194702  3623.402100 33.821342   1143.883179
27     28.000000   132.750000   0.035714   0.007533   0.001276   0.000269   0.005043   198.292648  -65.542648  4295.838867 35.771339   1279.588745
28     29.000000   135.000000   0.034483   0.007407   0.001189   0.000255   0.004864   205.607132  -70.607132  4985.367188 38.021339   1445.622192
29     30.000000   138.199997   0.033333   0.007236   0.001111   0.000241   0.004696   212.938202  -74.738205  5585.799316 41.221336   1699.198608
30     31.000000   140.800003   0.032258   0.007102   0.001041   0.000229   0.004540   220.285934  -79.485931  6318.013184 43.821342   1920.310059
31     32.000000   143.300003   0.031250   0.006978   0.000977   0.000218   0.004393   227.650330  -84.350327  7114.977539 46.321342   2145.666748
32     33.000000   145.000000   0.030303   0.006897   0.000918   0.000209   0.004255   235.031494  -90.031494  8105.669922 48.021339   2306.049072
33     34.000000   147.500000   0.029412   0.006780   0.000865   0.000199   0.004125   242.429504  -94.929504  9011.610352 50.521339   2552.405762
Suma  579.000000   3200.295898  4.055710   0.585557   1.612045   0.234192

Sr= 64036.078125          St= 51207.855469

Ymedia= 96.978661

a0= -0.000160     a1= 0.145678

ECUACIÓN DE AJUSTE LINEAL: Y= -0.000160 + 0.145678x


a0= 1/A= -0.000160=1/A ;             A= 1/a0 = 1/-0.000160= -6260.009277
a1= B/A ;           B= a1A= 0.145678*-6260.009277= -911.947327


ECUACIÓN DE AJUSTE DE CRECIMIENTO= Z= -6260.009277*(x/(-911.947327 + x))

Desv. del Estimado= 45.449753     Desv. Estandar= 40.003067          Coef. Determinación= -0.250513   Coef. Correlación= -1.#IND00

PRONOSTICOS:
Xint= 16.000000  Yint= 111.792450
Xext= 40.000000  Yext= 287.173737


___________________________________MÉTODO DE AJUSTE DE GOWPETZ_____________________________________________________________________________

Punto      x            y            u=e^x                    z=lny       u2                                  uz                          YY          ZZ           delta        delta2        beta         beta2
1          1.000000     6.300000     2.718282                 1.840550    7.389056                            5.003133                    4.377478    79.636909    -73.336906   5378.301758   -90.678658   8222.619141
2          2.000000     16.549999    7.389056                 2.806386    54.598152                           20.736544                   4.377478    79.636909    -63.086910   3979.958252   -80.428665   6468.770020
3          3.000000     26.400000    20.085537                3.273364    403.428802                          65.747276                   4.377478    79.636909    -53.236908   2834.168457   -70.578659   4981.347168
4          4.000000     35.000000    54.598148                3.555348    2980.957764                         194.115433                  4.377478    79.636909    -44.636909   1992.453735   -61.978661   3841.354248
5          5.000000     42.500000    148.413162               3.749504    22026.466797                        556.475769                  4.377478    79.636909    -37.136909   1379.150024   -54.478661   2967.924561
6          6.000000     48.757999    403.428802               3.886869    162754.796875                       1568.074951                 4.377478    79.636909    -30.878910   953.507080    -48.220661   2325.232178
7          7.000000     57.858002    1096.633179              4.057992    1202604.375000                      4450.128418                 4.377478    79.636909    -21.778908   474.320831    -39.120659   1530.425903
8          8.000000     65.000000    2980.958008              4.174387    8886111.000000                      12443.673828                4.377478    79.636909    -14.636909   214.239120    -31.978661   1022.634705
9          9.000000     73.519997    8103.083984              4.297557    65659972.000000                     34823.468750                4.377478    79.636909    -6.116913    37.416622     -23.458664   550.308899
10         10.000000    79.320000    22026.464844             4.373490    485165152.000000                    96332.531250                4.377478    79.636909    -0.316910    0.100432      -17.658661   311.828308
11         11.000000    84.570000    59874.140625             4.437580    3584912640.000000                   265696.281250               4.377478    79.636909    4.933090     24.335379     -12.408661   153.974869
12         12.000000    90.000000    162754.796875            4.499810    26489124864.000000                  732365.625000               4.377478    79.636909    10.363091    107.393646    -6.978661    48.701702
13         13.000000    94.800003    442413.406250            4.551769    195729620992.000000                 2013763.750000              4.377478    79.636909    15.163094    229.919403    -2.178658    4.746549
14         14.000000    100.050003   1202604.250000           4.605670    1446256967680.000000                5538798.500000              4.377478    79.636909    20.413094    416.694397    3.071342     9.433145
15         15.000000    106.050003   3269017.250000           4.663911    10686474223616.000000               15246405.000000             4.377478    79.636909    26.413094    697.651489    9.071342     82.289253
16         17.000000    110.000000   24154952.000000          4.700480    583461710594048.000000              113539880.000000            4.377478    79.636909    30.363091    921.917236    13.021339    169.555283
17         18.000000    103.750000   65659968.000000          4.641984    4311231531843584.000000             304792512.000000            4.377478    79.636909    24.113091    581.441162    6.771339     45.851036
18         19.000000    107.849998   178482304.000000         4.680741    31855933495705600.000000            835429504.000000            4.377478    79.636948    28.213051    795.976257    10.871338    118.185989
19         20.000000    111.070000   485165184.000000         4.710161    235385253160550400.000000           2285206016.000000           4.377478    79.636948    31.433052    988.036743    14.091339    198.565842
20         21.000000    115.000000   1318815744.000000        4.744932    1739274975342231600.000000          6257691136.000000           4.377480    79.637062    35.362938    1250.537354   18.021339    324.768677
21         22.000000    117.500000   3584912896.000000        4.766438    12851600979329548000.000000         17087266816.000000          4.377483    79.637321    37.862679    1433.582397   20.521339    421.125366
22         23.000000    119.349998   9744803840.000000        4.782060    94961204096780993000.000000         46600237056.000000          4.377491    79.638008    39.711990    1577.042236   22.371338    500.476746
23         24.000000    122.449997   26489122816.000000       4.807703    701673629055763610000.000000        127351824384.000000         4.377515    79.639908    42.810089    1832.703735   25.471336    648.789001
24         25.000000    125.000000   72004902912.000000       4.828314    5184706020615500300000.000000       347662254080.000000         4.377580    79.645073    45.354927    2057.069336   28.021339    785.195435
25         26.000000    128.300003   195729604608.000000      4.854371    38310077395809983000000.000000      950144139264.000000         4.377756    79.659088    48.640915    2365.938721   31.321342    981.026489
26         27.000000    130.800003   532048248832.000000      4.873670    283075339845441360000000.000000     2593027260416.000000        4.378235    79.697235    51.102768    2611.492920   33.821342    1143.883179
27         28.000000    132.750000   1446257098752.000000     4.888468    2091659593156109300000000.000000    7069981212672.000000        4.379536    79.800972    52.949028    2803.599609   35.771339    1279.588745
28         29.000000    135.000000   3931334246400.000000     4.905275    15455388925836186000000000.000000   19284275232768.000000       4.383072    80.083702    54.916298    3015.799805   38.021339    1445.622192
29         30.000000    138.199997   10686474223616.000000    4.928702    114200730400819600000000000.000000  52670446436352.000000       4.392686    80.857300    57.342697    3288.184814   41.221336    1699.198608
30         31.000000    140.800003   29048849825792.000000    4.947340    843835682327256980000000000.000000  143714555002880.000000      4.418818    82.998085    57.801918    3341.061768   43.821342    1920.310059
31         32.000000    143.300003   78962956959744.000000    4.964941    6235148841753849200000000000.000000 392046393163776.000000      4.489851    89.108208    54.191795    2936.750732   46.321342    2145.666748
32         33.000000    145.000000   214643574308864.000000   4.976734    46071865476425097000000000000.000000 1068223931875328.000000    4.682941    108.087486   36.912514    1362.533691   48.021339    2306.049072
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Suma    579.000000     3200.295898     923022831648768.000000  145.770325      39371049388457765000000000000.000000   4600808695922688.000000

Sr= 53121.910156        St= 51207.855469

Ymedia= 96.978661

a0= 4.377478     a1= 0.000000

ECUACIÓN DE AJUSTE LINEAL: Y= 4.377478 + 0.000000x


a0= lnA= 4.377478=lnA ;  A= e^a0 = e^(4.377478)= 79.636909

a1= lnB= 0.000001=lnB ;  B= e^a1 = e^(0.000001)= 1.000001

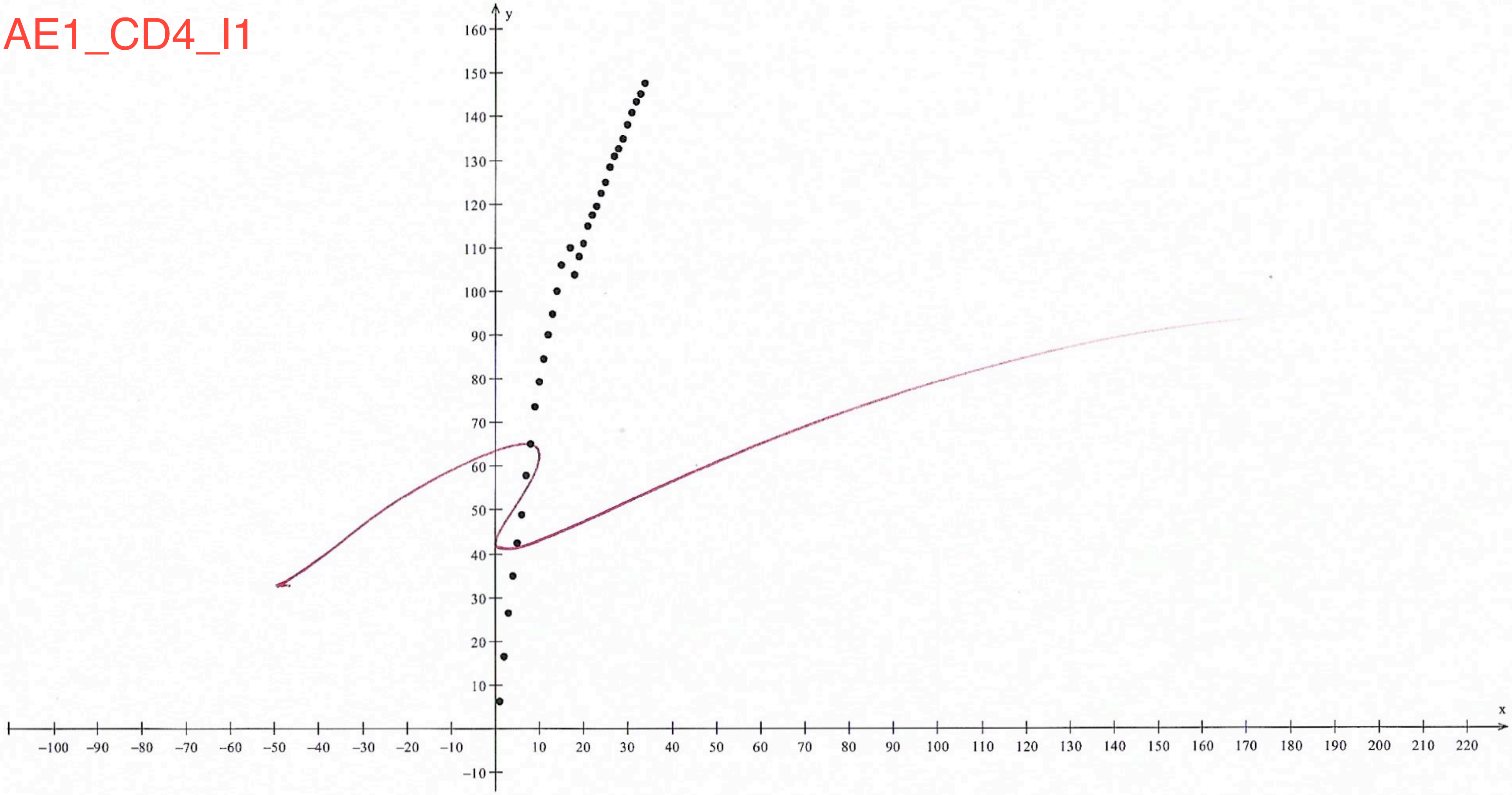
ECUACIÓN DE AJUSTE DE GOMPETZ = Z= 79.636909*1.000001^(e^x)

Desv. del Estimado= 41.395771    Desv. Estandar= 40.003067       Coef. Determinación= -0.037378  Coef. Correlación= -1.#IND00

PRONOSTICOS:
Xint= 16.000000  Yint= 79.636909
Xext= 40.000000  Yext= 79.636909
```

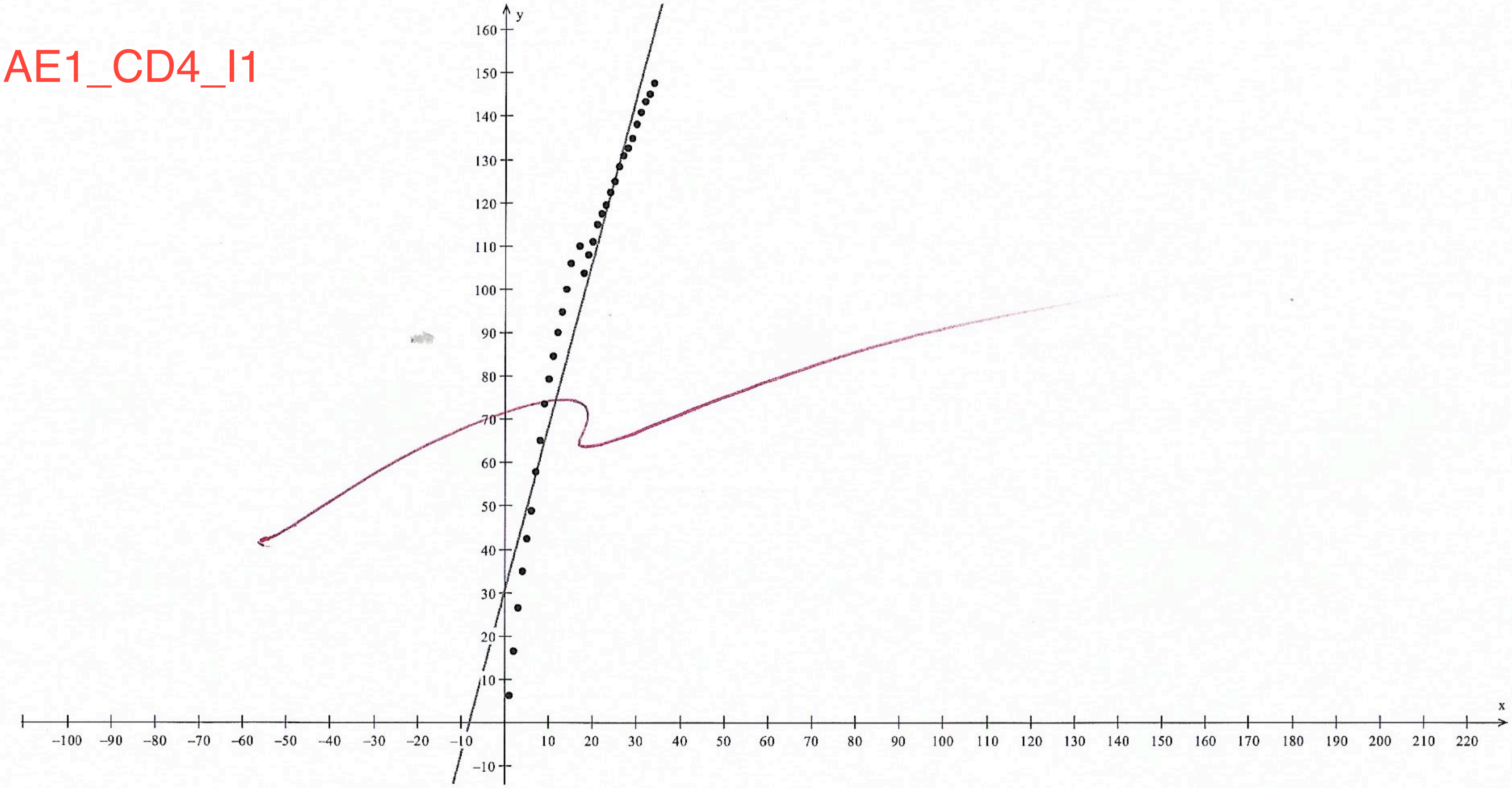
DATOS DE ENTRADA

AE1_CD4_I1



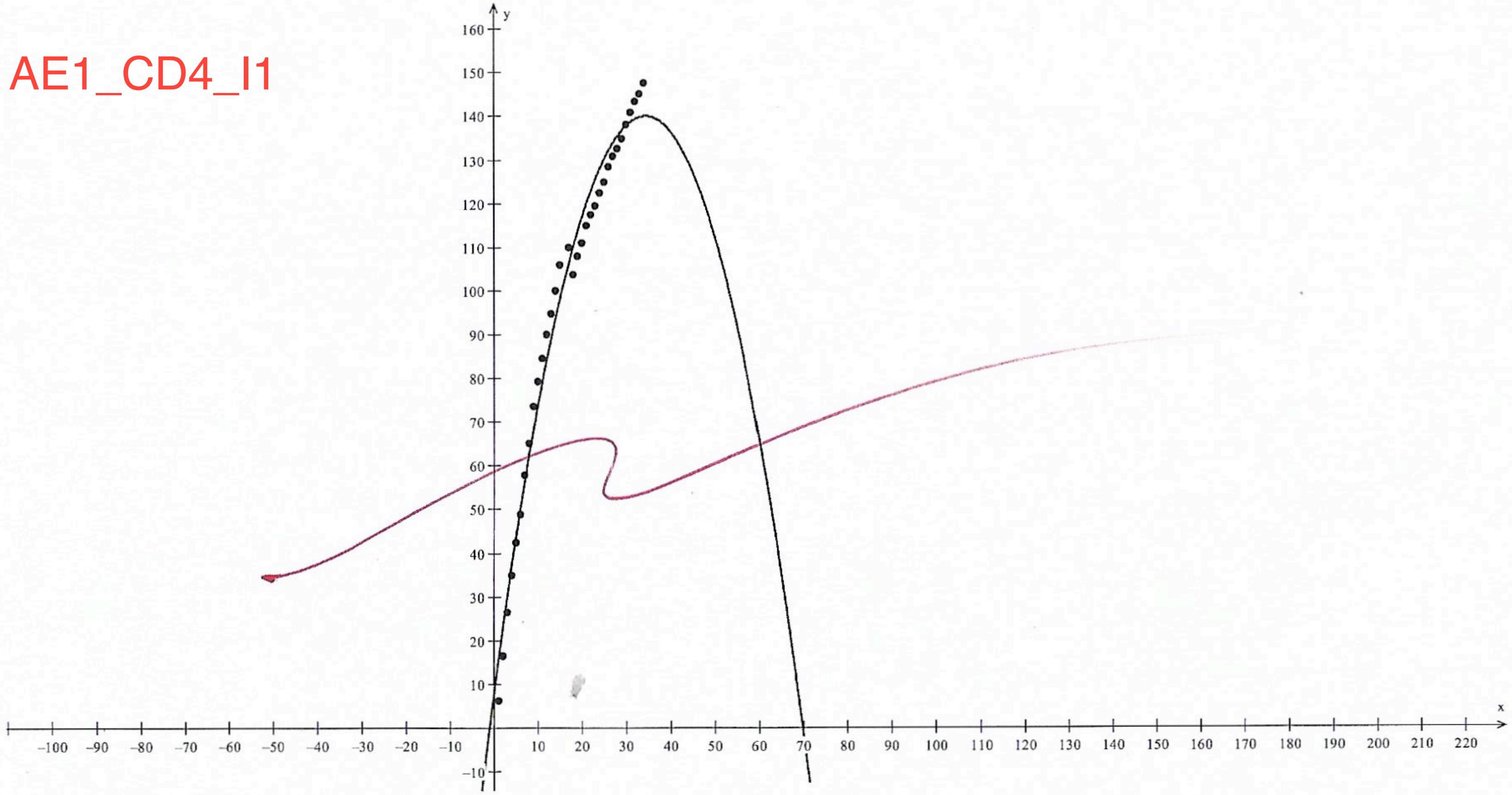
MÉTODO DE AJUSTE LINEAL; ECUACIÓN DE AJUSTE LINEAL: Y= 30.236092 + 3.803981x

AE1_CD4_I1



MÉTODO DE AJUSTE PARÁBOLICO;   ECUACIÓN DE AJUSTE PARABOLICO: Y= 7.039337 + 7.733087x + -0.112403x^2

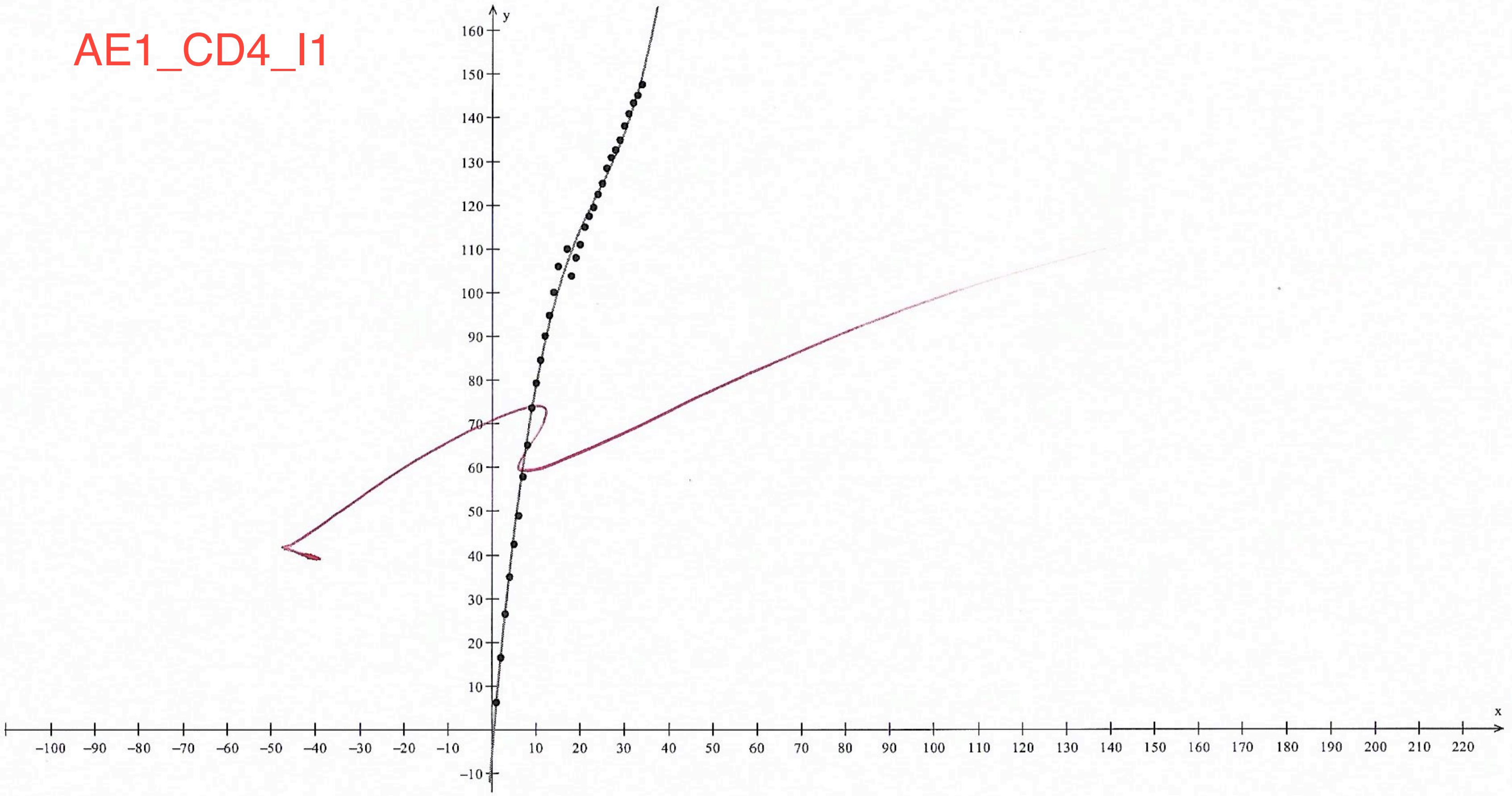
AE1_CD4_I1



MÉTODO DE AJUSTE CUBICO;

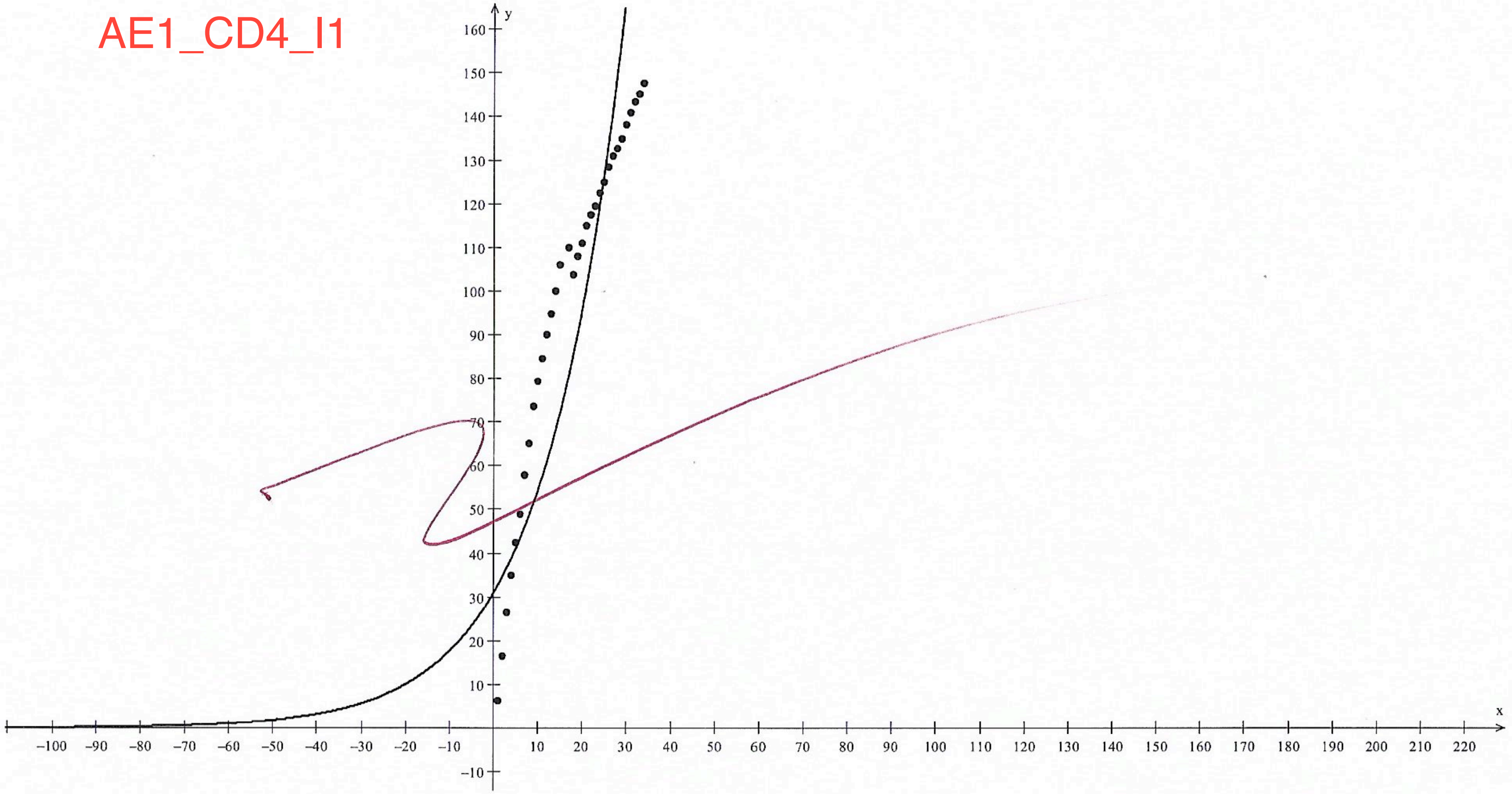
ECUACIÓN DE AJUSTE CÚBICO: Y= -6.933292 + 12.202136x + -0.426196x^2 + 0.005965x^3

AE1_CD4_I1



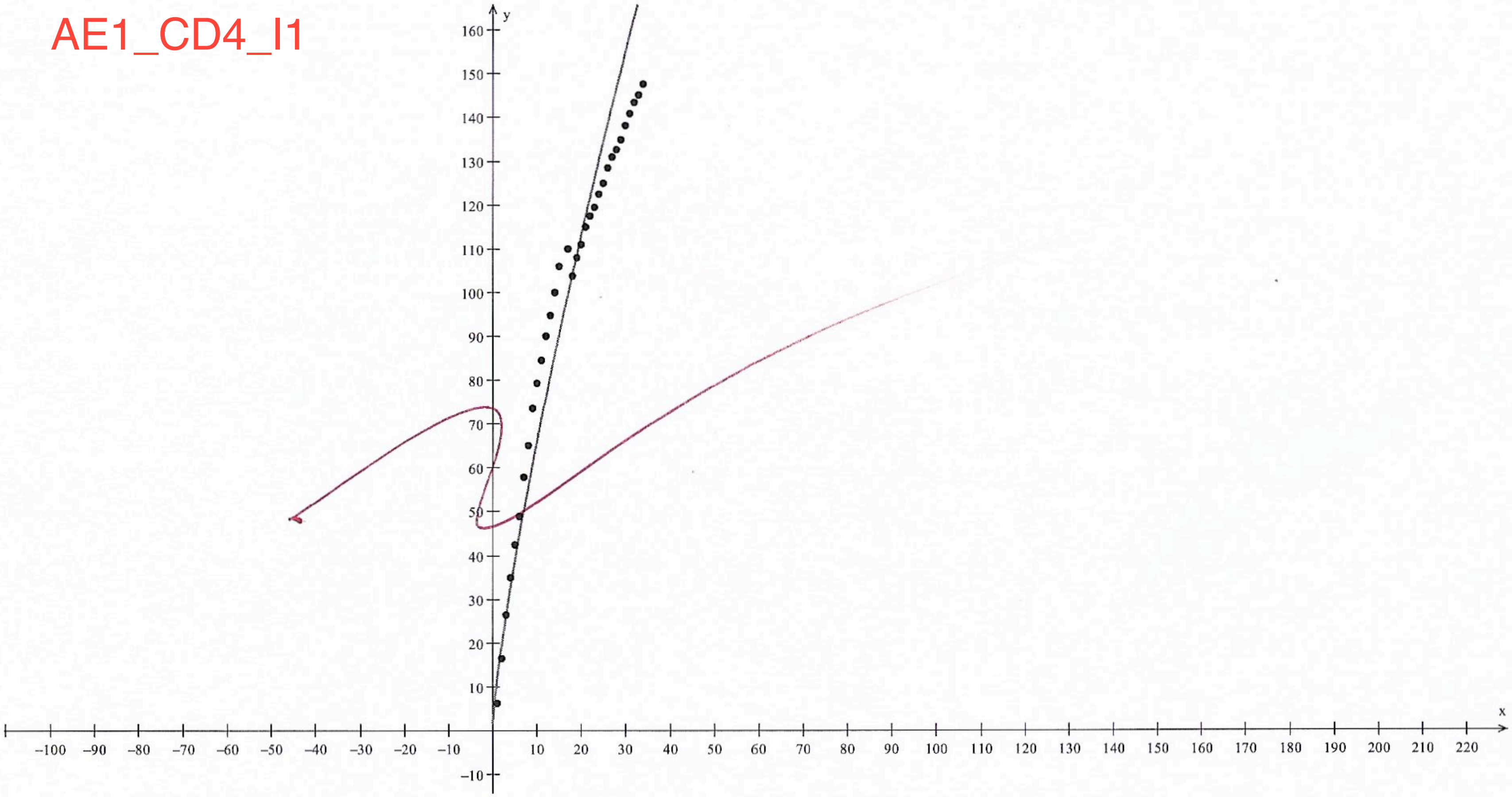
MÉTODO DE AJUSTE EXPONENCIAL; ECUACIÓN DE AJUSTE EXPONENCIAL= Z= 30.739767*e^(0.056523*x)

AE1_CD4_I1



MÉTODO DE AJUSTE DE POTENCIAS ; ECUACIÓN DE AJUSTE DE POTENCIAS= Z= 10.869029*x^(0.781219)

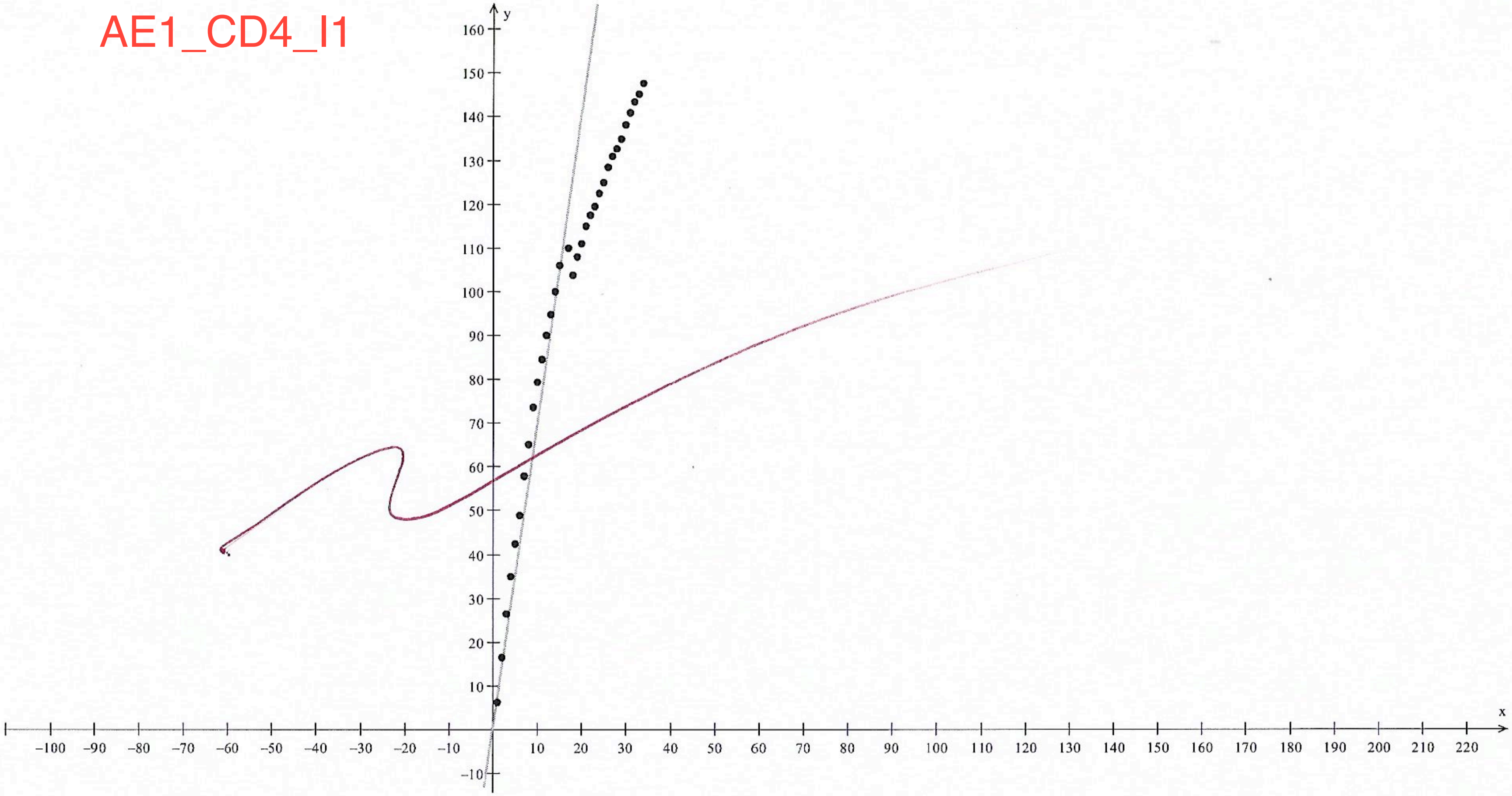
AE1_CD4_I1



MÉTODO DE AJUSTE DE CRECIMIENTO;

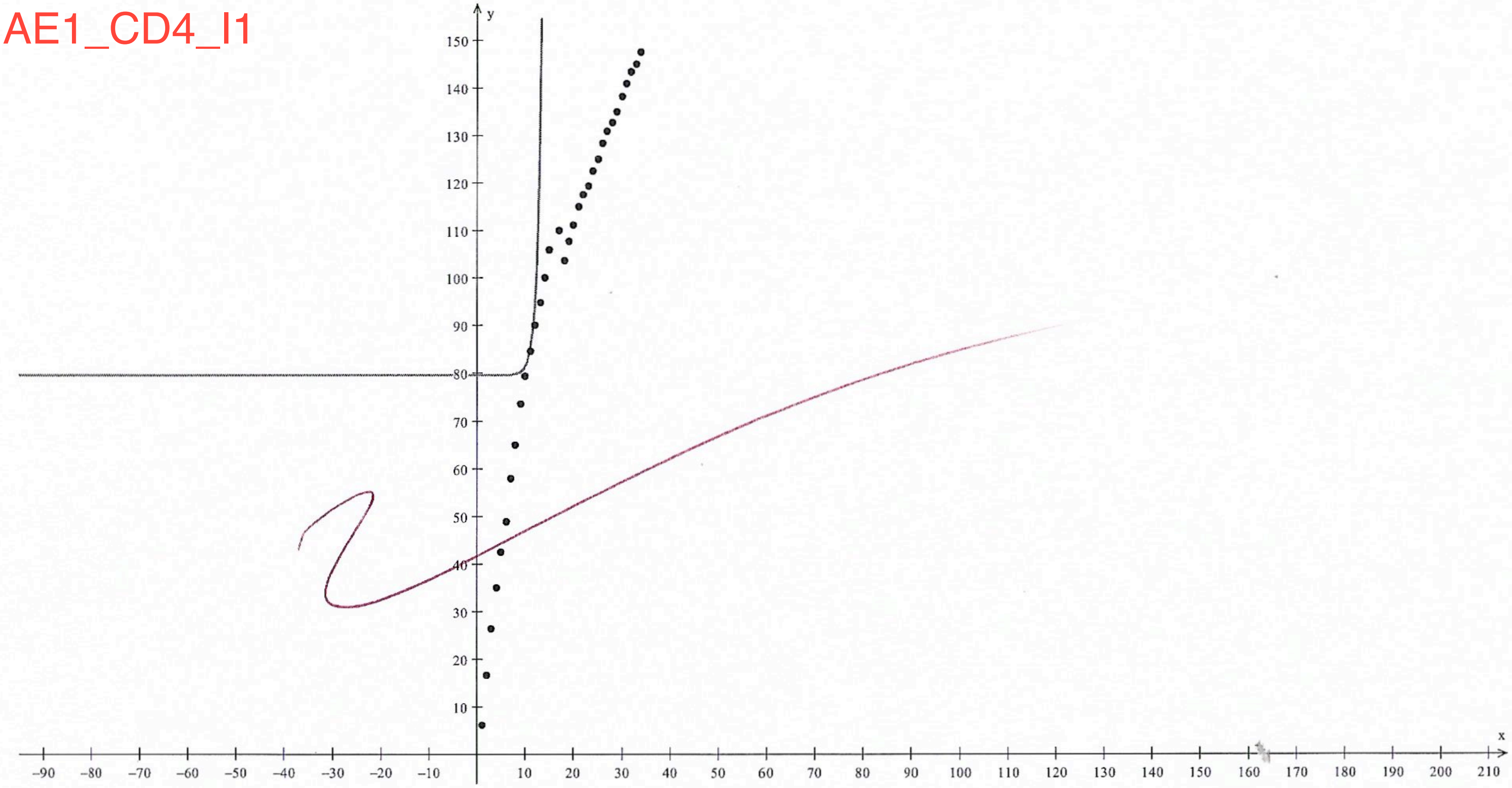
ECUACIÓN DE AJUSTE DE CRECIMIENTO= Z= -6260.009277*(x/(-911.947327 + x))

AE1_CD4_I1



MÉTODO DE AJUSTE DE GOWPETZ; ECUACIÓN DE AJUSTE DE GOWPETZ = Z= 79.636909*1.000000^(e^x)

AE1_CD4_I1



CONCLUSION

Podemos notar, gráficamente, que al realizar el ajuste por método cubico obtenemos una función por la cual pasan casi todos los puntos de los datos analizados, haciendo énfasis en los datos obtenidos de nuestra tabla para el ajuste cubico podemos notar que el coeficiente de correlación es muy cercano a 1, dando un valor de 0.998335, lo cual podemos decir que este método es el más adecuado para realizar pronósticos y poder solucionar las problemáticas planteadas al principio del problema.

AE1_CD4_I1

Dando respuesta a esta problemática inicial, estos son los datos del pronóstico:

En la semana 16 la persona registro una pérdida de peso total de 103.6287 kg, por lo tanto en esa semana no perdió peso, tuvo un aumento de 2.4213 kg. Para la semana 40 de su dieta se tiene estimado que tendrá una pérdida total de 181.020477 kg por lo tanto su peso para esa semana será de 68.9795 kg.