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> # Maple Worksheet for maple lab 3, data set 3.
  # Height and weight data
> restart;
> # data set 3, size 303
> myfile3:="./DataSet3.txt";
> DataSet3 :=readdata(myfile3,2);
> nops(DataSet3); # Number of data items
> plot(DataSet3,color=red,style = point,symbolsize=16 );
> c:=53:d:=80: # Estimate t-domain from the graphic
> M3:=Matrix(DataSet3);
> a1:=M3.<1,0>; # Data column for t-values
> a1LOG:=<map(x->ln(x),a1)>; # Column vector of X=ln(x) data
> b:=M3.<0,1>; # Data column for y(t)-values
> a2:=<seq(1,i=1..34)>; # Column vector of ones
> bLOG:=<map(y->ln(y),b)>; # Column vector of Y=ln(y) data
> A:=<a1LOG|a2>; # Least squares fit to a line Y= v[1] X + v[2]
> v:=(A^+.A)^(-1).(A^+.bLOG); # Solve the normal equations
> # y = k x^n ==> ln(y)=n ln(x)+ln(k)
  yLOG:=v[1]*ln(x)+v[2]; # Best-fit Y=v[1]*X+V[2], Y=ln(y), X=ln(x)
> y:=exp(yLOG[1]); # Best fit weight=k(height^n)
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$$y := e^{2.16506198400657012 \ln(x) - 4.06835850562675} \quad (1)$$

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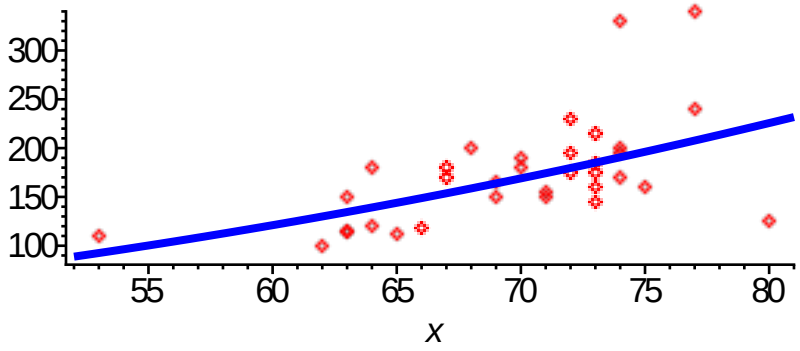
> opts:=color=[red,blue],style=[point,line],symbolsize=16,
  thickness=3: # Plot options
> plot([DataSet3,y],x=c-1..d+1,opts);
```

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> # Person whose height is 5 feet 10 inches is predicted to have
  weight
  # W = k H from the graphic at location x=5*12+10=70.
> subs(x=5*12+10,y);evalf(%); # Answer 169 lbs.
```