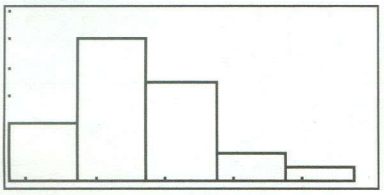
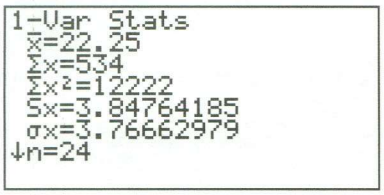
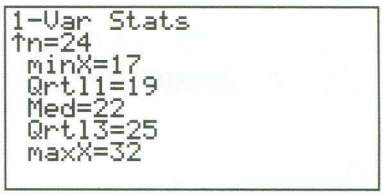
Chapter 9

1. (a) The histogram is given below. Tracing reveals that the five intervals listed have 4, 10, 7, 2, 1 scores in them, respectively.

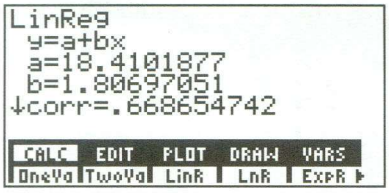


(b) The following screen shots show the summary statistics for the ACT data.

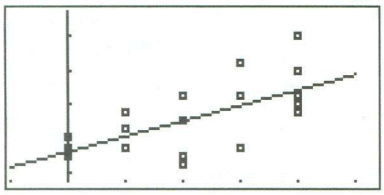




(c) Executing **LinR** GRD, ACT, $y1$ (where GRD is a list containing the Course Grade numbers and ACT is a list containing the corresponding ACT scores) from the home screen produces the following:

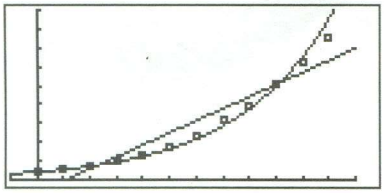


(d)

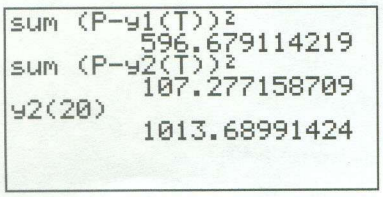


(e) The forecasted ACT scores for the grades A, B, C, D, and F are 25.638, 23.831, 22.024, 20.217, and 18.410, respectively.

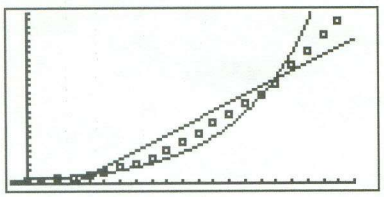
2. The desired scatter diagram together with both the linear and exponential regression models is

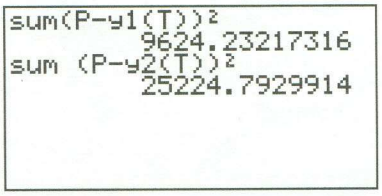


After storing the linear regression equation in $y1$ and the exponential regression equation in $y2$, the following screen shot shows the two SSD values and the predicted P value when $T = 20$.

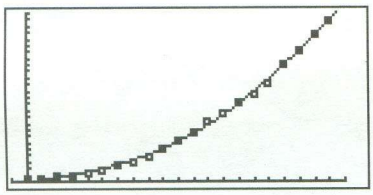


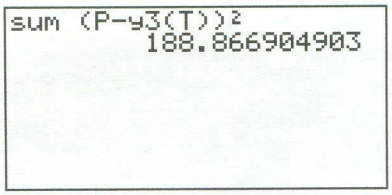
3. (a) After computing and storing the linear regression equation in $y1$ and the exponential regression equation in $y2$, the following screen shot shows the desired scatter diagram together with both the linear and exponential regression models. The second screen shot shows the two SSD values.





(b) Executing **LgstR** T, P, $y3$ from the home screen enables us to eventually obtain the following scatter diagram along with the graph of the logistic regression model. The SSD value for the logistic model is shown in the second screen shot.





4. (a) This is to be expected since the data comes from a quadratic polynomial, and the set of polynomials considered in the best fit for a cubic or fourth degree polynomial regression includes the quadratic polynomials.

(b) The inequalities all hold as they do since the polynomials considered in the best fit for a given polynomial regression computation will include the polynomials considered in the best fit computation for any lower degree polynomial regression computation.

(c) The numbers are 2, 2, 2, 2, 3, 4, and 5, respectively.