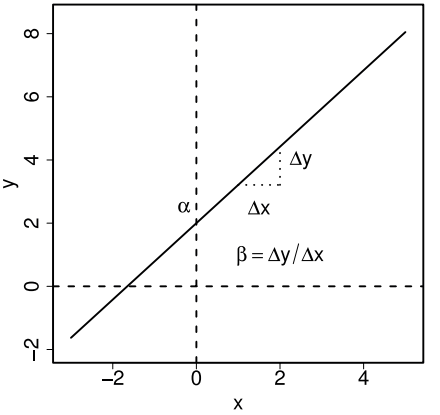

Figure 2.1: The straight line.

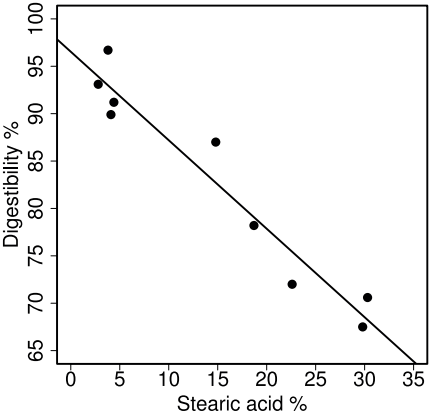

Figure 2.2: Digestibility of fat for different proportions of stearic acid in the fat. The line is $y = -0.9337 \quad x + 96.5334$.

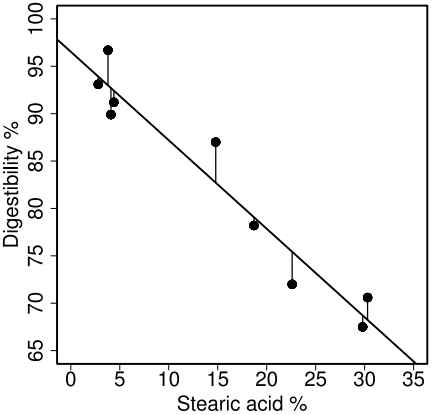

Figure 2.3: Residuals for the dataset on digestibility and stearic acid. The vertical lines between the model (the straight line) and the observations are the residuals.

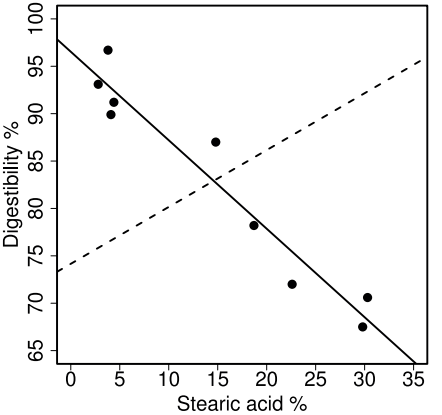

Figure 3.4: Two regression lines for the digestibility data. The solid line is defined by $y = -0.9337 \quad x + 96.5334$ while the dashed line is defined by $y = 0.6 \quad x + 74.15$. Both regression lines have residual sum zero.

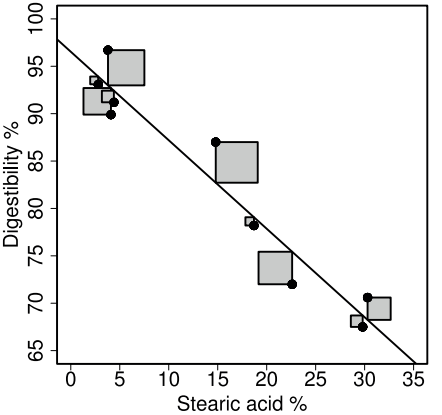

Figure 2.5: Squared residuals for the dataset on digestibility and stearic acid. Gray areas represent the squared residuals for the proposed regression line.

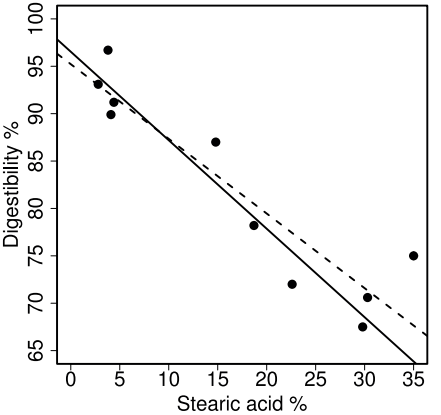

Figure 2.6: The effect of influential points on linear regression slopes. If we add a single extra point at (35, 75) to the stearic acid data we will change the regression slope from −0.9337 (solid line) to −0.706 (dashed line).

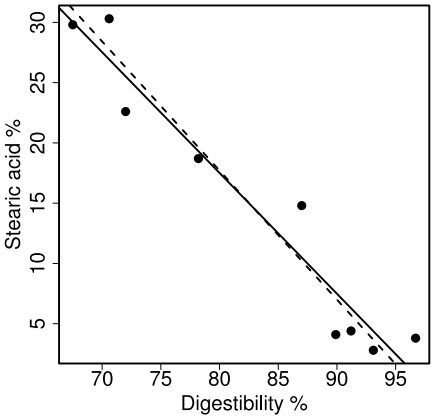

Figure 2.7: Interchanging x and y. Regression estimates of x on y cannot be determined from the regression estimates of y on x as the vertical residuals are used to fit the model for the latter while the "horizontal" residuals are needed for the former. The solid line corresponds to the regression of stearic acid percentage on digestibility while the dashed line is the ordinary regression of digestibility on stearic acid.

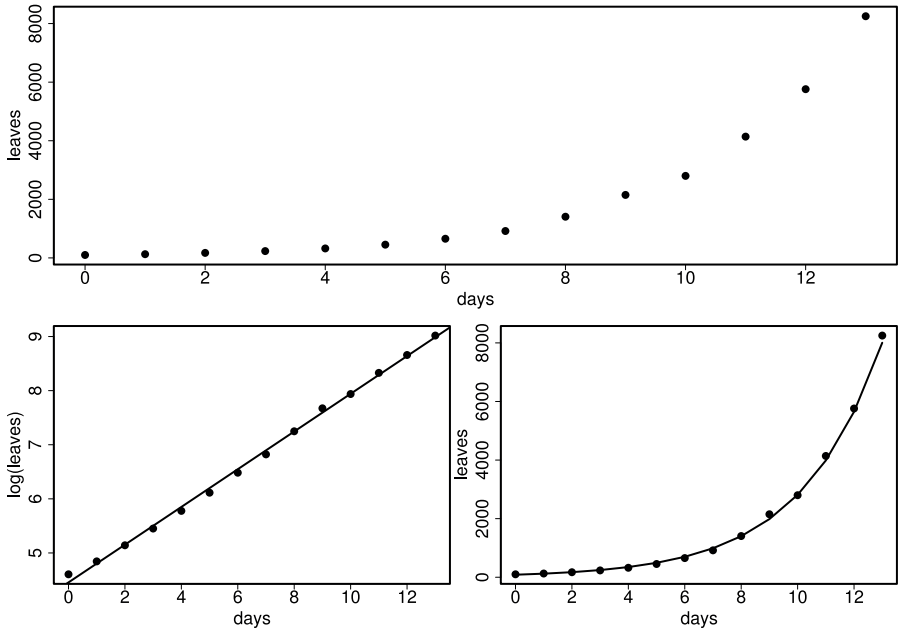

Figure 2.8 : Top panel shows the original duckweed data. Bottom left shows the data and fitted regression line after logarithmic transformation and bottom right shows the fitted line transformed back to the original scale.

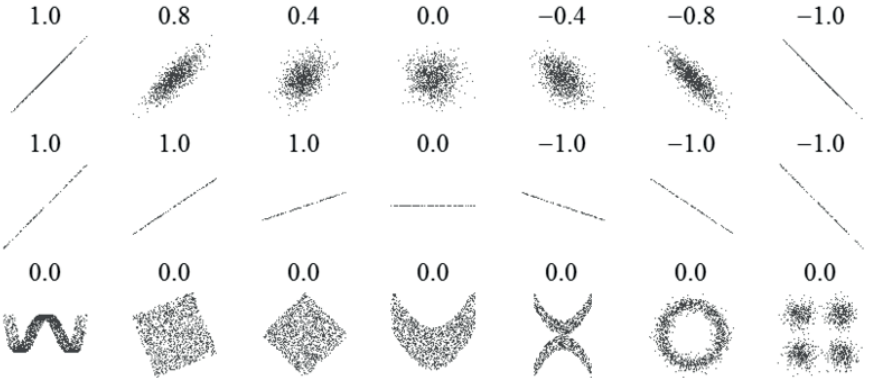

Figure 2.9: Correlation coefficients for different datasets. Note from the second row of graphs that the slope has no influence on the correlation coefficient except for the middle case where the variance of y is 0 so the correlation is not well-defined. The last row of graphs shows that the correlation may be zero even though the data is highly structured. (Picture courtesy of Wikipedia.)

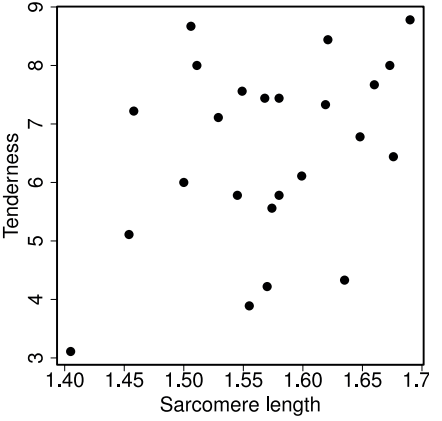

Figure 2.10: Graph of tenderness of pork and sarcomere length for 24 pigs.

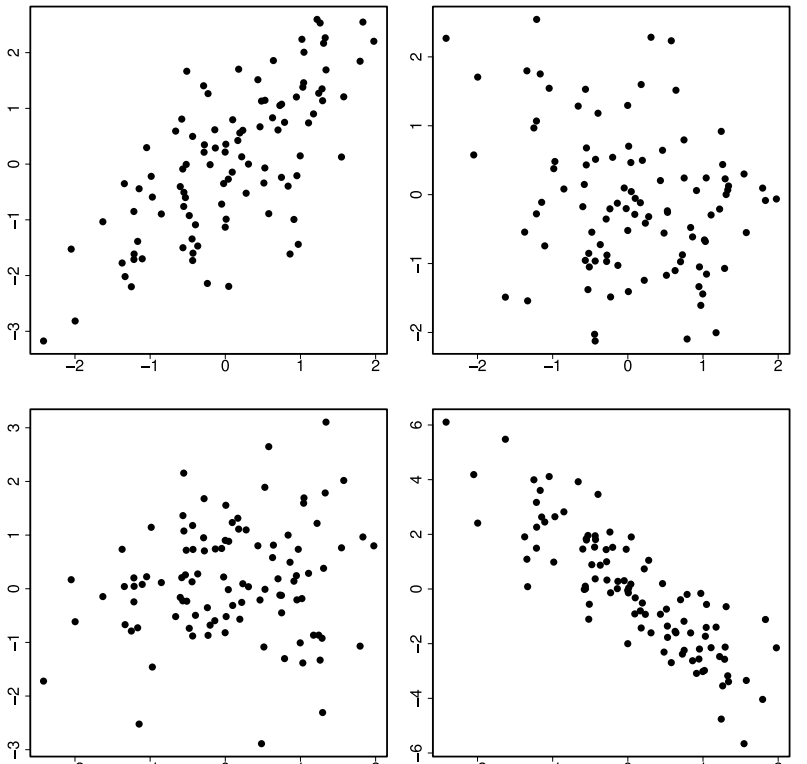

Figure E.8:

ex002x008.eps