**Chapter 3.2 – Describing Relationships: Least-Squares Regression Line**

*Quick Summary*

* Regression line
  + Straight line that describes how a response variable *y* changes as an explanatory variable *x* changes.
  + Can be used to predict the value of *y* for any value of *x* by substituting this *x* into the equation of the line.
  + The equation of the line may be seen in one of two forms:
    - where *a* is the y-intercept and *b* is the slope
    - where is the y-intercept and is the slope
* Residuals
  + Vertical distances from observed values of the response variable to predicted values on the regression line.
* Least-Squares Regression Line
  + Line of best fit for a scatterplot with a linear trend that minimizes the sum of the squares of the vertical distances of the observed points from the line.