MATH 3080: Statistical Report Assignment No.3

For each study write your own statistical report.

1. (Sample assignment problem.) It is expensive and cumbersome to determine the body fat in humans as it involves immersion of the person in water. It would therefore be very helpful if a regression model with some or all of these predictor variables could provide reliable predictions of the amount of body fat, since the measurements needed for the predictor variables are easy to obtain. The dataset contains the variables for body fat, thigh circumference, and mid-arm circumference.

The data set is available at [https://vps63.heliohost.us/e-stat/](http://math.tntech.edu/e-stat/). Go under the title “Textbook Data Sets” → “Body fat in women.”

**Objective of study.** The researcher is interested in the model that best predicts body fat from (some of) the two explanatory variables that are easy to measure.

1. A cattle feed company conducts research on the number of days of feeding time in days (TIME) required to bring beef cattle to market weight. Eighteen steers of essentially identical age and weight are purchased and brought to a feedlot. Each steer is fed a diet with a specific combination of protein content in percentage points (PROTEIN), antibiotics (ANTIBIO: 0=not mixed, 1=mixed), and percentage of feed supplement (SUPPLEM).

The data set is available at <https://vps63.heliohost.us/e-stat/>. Go under the title “Worksheet Data Sets” → “Feed Time Research.”

**Objective of study.** (a) Determine the most appropriate model, and identify the explanatory variables for the model. (b) The company is interested in how the presence of antibiotics influences feeding time. Present your analysis.