2. A description of the approach used.

To solve this problem, we first found data from the USDA that included nutritional information and prices for many different foods that are common for college students. After some dating cleaning, we kept calories, protein, fat, carbohydrates, and calcium as our nutritional values, with which to constrain the equation. Those values were then added as parameters to the GAMS model, along with a set of all food items and a subset of each individual food group. We have two variables: cost, which is a free variable that we are trying to minimize, and x, which is an integer variable for how much of each food we purchase. For the model, we solved a mixed integer program. We also made this a stochastic model, making price uncertain based on different inflation rates and price fluctuations over time.