# Math 189: Homework 3

## USDA Women's Health Survey

The USDA Women's Health Survey dataset (nutrient.txt) contains five types of women's nutrient intakes which were measured from a random sample of 737 women aged 25-50 years in the United States.

### Tasks

Analyze the dataset according to the following steps:

1. Calculate sample mean and sample standard deviation of each variable.
2. The recommended intake amount of each nutrient is given in the table below. For each nutrient, apply a univariate t-test to test if the population mean of that variable equals the recommended value. Set the significance level at $\alpha = .05$.
3. Repeat step 2, now using the Bonferroni and Holm's Methods to control the FWER for the five tests. How does this affect the results?
4. Based on the results you obtained in steps 2 and 3, how would you interpret your test results? Do you think the US Women meet the recommended nutrient intake amount? If not, what would you suggest to the public?

### Recommended Levels

- Calcium: 1000mg
- Iron: 15mg
- Protein: 60g
- Vitamin A: 800 $\mu$g
- Vitamin C: 75mg

### Remarks

Your R Markdown Notebook report should have a introduction, body, conclusion (and optional appendix). Importantly, your code should run!