398 Math in the City
Instructor: Petronela Radu
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Homework 4

Due March 1

1. Refer to the Data Set 1 in the attached link. Use the t Test for Spearman rank correlation to study the relationship between alcohol intake, as reported on the diet record, to
   (a) alcohol intake as reported on the food-frequency questionnaire;
   (b) total fat intake;
   (c) saturated fat intake.
2. Refer to the Data Set 2 in the attached link. Use logistic regression methods to assess whether the presence of biliary secretions during the second period (any or none) is related to
   (a) the type of hormone used during the second period.
   (b) the dose of hormone used during the second period (do separate analyses for each of the active hormones - hormones 2-5).
3. Solve the following Bernoulli DE:
$$t^2y' + 2ty - y^3 = 0, \quad t > 0.$$
4. Use an appropriate substitution to solve the DE:
$$2x^2 + 4yy' = (x^3 + 3y^2)^{\frac{1}{3}}$$