Statistics 5303 — Exam 1   NAME _____

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This exam is open book, open notes; you may use a calculator. **Do your own work!** Use the back if more space is needed. There are seven questions, each worth 10 points. Please attach your data analysis notes for these data sets to your exam with the paper clips provided in the front of the room.

Questions 1 through 3 relate to the political advertising data. **Provide some justification for your answers!**

1. Describe how you checked assumptions and what you decided. Tell me about nonnormality, nonconstant variance, outliers, and so on. Were there any problems that required fixing?

2. How would you describe the effect of editorials on the voters' perceptions?

3. Is there any evidence that actually seeing (reading) the ad made any difference to the voters' perceptions?

Questions 4 through 6 relate to the rennet data. **Provide some justification for your answers!**

4. Describe how you checked assumptions and what you decided. Tell me about nonnormality, nonconstant variance, outliers, and so on. Were there any problems that required fixing?

5. Is there any simple model that accounts for most of the variation in these data?

6. Is there an interaction between solids and pH? If so, how would you describe it?

7. Suppose that I have planned an experiment with three treatments, 20 units per treatment, and anticipated error standard deviation $\sigma = 10$. Will my power increase more if I spend money to double my sample size (to 40 units per treatment), or spend money to halve my σ to 5? Explain your answer.