1. The project consists of writing up the solutions to two problems as you would in a research paper. The problems should be treated separately but be stapled together as a single paper. Start problem 2 on a new sheet.

2. Your finished project should have a cover sheet which lists the names of every member in your group and your section number.

3. A good research paper starts with an introduction. Write out (copy) each problem completely. This as a minimum could serve as your introduction.

4. Solve and completely discuss your solution to the problems. Be sure to read the instructions for each of the problems and supply all the answers requested.

5. Accompany the solutions with the appropriate diagrams. Be sure to correctly label the diagrams and name the variables.

6. Present each solution in a neat, orderly fashion working from top to bottom of the pages - not scattered all over the page as in the case of some of your homework.

7. Type as much of the project as possible. Mathematical equations and expressions can be neatly hand written if necessary.

8. After each problem has been set up and an equation for it's solution has been found it is to be solved by Newton's methods I have demonstrated or will be demonstrating on the board.
   a. State \( f(x) \)
   b. State \( f'(x) \)
   c. Find an interval for the solution of \( f(x) = 0 \) using either synthetic substitution or a graph.
   d. State Newton's method as it applies to the problem.
   e. Choose a seed value, \( x_1 \).
   f. Hand compute \( x_2 \) showing the substitution of \( x_1 \) into Newton's formula.
   g. Use a calculator to compute successive \( X \)'s until a solution is reached. List all of those solutions. (Work Newton's Method accurate to 10 digits)

9. Demonstrate an appropriate test of the solution(s). (first or second derivative test)

10. Be sure to find all the other requested items related to your solution.

11. Completely discuss your solutions. This represents the conclusion of the project.

12. The first draft is due Tuesday, November 20. My intention is to only correct the mathematical content of the solutions at that time. The formal write up need not be completed then. Nonetheless, it should be in pretty good form, as you will not have much time to complete it after I return the first draft. The final draft is due Tuesday, December 4.

**DEADLINE REMINDERS:**
Tuesday, Nov. 20 - Project First Draft Due
Tuesday, Nov 27 - Return First Draft
Tuesday, Dec. 4 - Project Final Draft Due
Thursday, Dec. 6 - Third Midterm Exam
Friday, Dec. 14 - Final Exam

Shannon Negaard