

- Groups of two (in one case three) students each will work on one of the final projects listed below. You should not work with students you worked with for the class presentation.
- Deliverables consist of a complete written solution and a 15-minute presentation. The written solution does not need to be typeset if the handwriting is legible. The written solution needs to have a narrative; you also need to list the sources you use.
- The projects will be presented during the final exam period. The written solution is due before the start of the presentation.
- The student group will be graded as a group. All group members must contribute to both the written solution and the presentation in equal parts. If members of a group feel that one member is not contributing in a meaningful way, they can ask me to remove the particular student from their group.
- The group will be graded foremost on mathematical correctness and mathematical clarity of both their written solution and their oral presentation. Other criteria include the quality of the presentation (organization, boardwork, seeking and responding to student feedback, etc.), making effective use of the allotted time and staying within the time frame of 15 minutes for the oral presentation.
- Projects will be assigned on Thursday, April 8.

Projects (the numbers refer to end-of chapter projects):

1. Quaternary system - State and prove theorems for numbers in base 4 corresponding to the theorems in Section 2.1.3.
2. Countability of algebraic numbers (2.2) [**Luis and Melisa**]
3. Cardano-Tartaglia method for solving cubic equations (2.5) [**Lisa and Marina**]
4. Leibniz segments (3.1 and 3.2) [Requires *Geometer's Sketchpad*]
5. Limit definitions for the number e (3.6) [**Agatha and Jaime**]
6. Newton's method (4.6) [Requires some technology such as a spreadsheet or a computer algebra system] [**Brenda, Ivan and Marisol**]