

- The final project will account for 25% of your course grade.
- Groups of two students each will work on one of the final projects listed below. You must work with a student other than the one you worked with for the student presentation.
- Deliverables consist of a complete written solution (target length: five pages) and a 15-minute presentation. The paper does not need to be typeset if the handwriting is legible.
- The projects will be presented during the final exam period on **Thursday, May 12, 13:00–15:45**. The accompanying papers are due before the start of the presentations.
- 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 the mathematical correctness and mathematical clarity of their solution. Other criteria include the quality and completeness of the written report, the quality of the group presentation, 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 **Tuesday, April 12**.

**Projects:**

(The numbers refer to end-of chapter projects.)

1. EDUARDO & JANET: (2.2) Countability of algebraic numbers
2. CATHERINE & YESICA: The field of algebraic numbers
3. MARTIN & NORMA: (2.8) Stereographic projection
4. Transcendence of the number  $e$  (Felix Klein)
5. HEIDI & LAUREN: (2.5) Cardano-Tartaglia method for solving cubic equations. Include a discussion of the *Casus Irreducibilis*.
6. (4.6) Newton's Method. Include a discussion of the application of Newton's Method to the polynomial  $f(x) = x^2 + 1$ . This project requires the use of appropriate software, e.g. Excel or Mathematica.