MATH 174, LECTURE 3

1. Go over homework questions.
2. Comment on departmental syllabus (for MWF class schedule).
3. Homework: pages 39–41, numbers 1, 2, 4, 5, 6, 7, 12, 21, 23, 24, 26, 28
   Quiz: Thursday (09/06)
4. Comment on "if p then q" in a computer program (this line of code is made correct before going on to the next line).
5. if p then q
   p
   Therefore q

   Definitions: An *argument* is a sequence of statements. All statements but the final one are *premises* (or *assumptions* or *hypotheses*). The final statement is called the *conclusion.*
6. **Definition:** An argument form is *valid* means that no matter what particular statements are substituted for the statement variables in its premises, if the resulting premises are all true, then the conclusion is true.

   Note: An argument is valid if its form is valid.
7. **Examples:** pages 39–40 # 9, 10, 22, 3
8. **Contradiction Rule:** If you can show that the supposition that p is false leads logically to a contradiction, then you can conclude that p is true.
9. **Examples:** (1) $\sqrt{2}$ is irrational
   (2) there exist irrational numbers α and β such that α^β is rational
10. Give quiz.