

Homework #16, Fall 2009

Follow the separate general guidelines for Parts A,B,C. Be sure to include and label *all four* standard parts a,b,c,d of Part A in what you hand in.

A: To hand in one class period before discussion.

a. Read Susanna Epp's Sections 3.6 and 3.7.

Reading questions (RQ) for part a of Part A:

1. Describe, in your own words, the structure of a proof by contradiction.
2. How does Epp say that most mathematical texts end a proof by contradiction?
3. Describe, in your own words, the structure of a proof by contraposition.
4. In the proof of Proposition 3.7.2, Epp references Theorem 3.7.1. What theorem in Section 3.6 could you use to make a different, and much shorter, proof of Proposition 3.7.2 if you already know that $3\sqrt{2}$ is irrational?
5. What does Epp say about when to use indirect proof?

B: Warmup exercises: Will be assigned in class.

C: Main exercises. Will be assigned in class.