

### 310 and 310W

*Please write the answers to the following questions and give it to me on the first day of class.*

1. What is your interest in this course?
2. What other mathematics courses have you taken till now?
3. What is a theorem that you have studied and remember? Can you state it precisely?
4. Have you seen a proof of the above theorem? If so (or otherwise) can you write one down precisely? If you can, please do so.
5. Are you familiar with any (or some) of the following statements and concepts?
  - (a) Principle of Mathematical Induction.
  - (b) Pigeon hole principle.
  - (c)  $\sqrt{2}$  is irrational.
  - (d)

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!},$$

for all real numbers  $x$ .

6. Do you know how to write a precise proof of either of the last two statements? If so write a proof for either of them.