Mathematics V1207x
Honors Mathematics A

Assignment #1
Due September 18, 2015

Carefully read the course syllabus.

Do the following exercises mentioned in class.

1. (Excluded middle) Prove that $P \vee \sim P$ is true regardless of the truth value of P.

2. (Associativity of $\wedge$) Prove that $(P \wedge (Q \wedge R)) \Leftrightarrow ((P \wedge Q) \wedge R)$ [is true regardless...]

***3.** Prove that $(P \wedge Q) \vee (\sim P \vee \sim Q)$ [is true regardless...]

Print and read the article "Introduction to mathematical arguments" by Michael Hutchings, available on the course home page. Then do exercises 1*, 2, 3*, 4*, 5*, 6, 7, 8* on p. 27. (In exercise 3, since we haven't introduced numbers yet, you don't need a formal proof; an informal discussion is sufficient.)

Also, read pp. 1–15 in Apostol. The "Historical Introduction" is not essential to the course but gives a very good overview of what integral and differential calculus are about. Then, from §I 2.5 (pp. 15–16), do exercises 7ab, 7c*, 9, 10, 14*, 18*, 20*.

Only the problems marked * are to be written up and handed in. The rest are supplementary problems for your own benefit.