

1. Let A be the formula $P \rightarrow Q$. Construct a truth table for A , and apply the statement of Lemma 2.1 to each of the four rows of the truth table. For example, for the first row (T, T) you should get $P, Q \vdash P \rightarrow Q$. Do this for the remaining three rows. We get a total of four statements this way (the first one being $P, Q \vdash P \rightarrow Q$).

Then construct a formal proof for at least two of these four statements (doing all four is hard, and not necessary) using PC1-3 and MP.

2. Practice proving the Deduction Theorem without looking at the book or your notes.