CSI 30, Homework 2 on Section 1.2

Due by Wed, Sept 16.

Write all your working out and answers on your own notepaper. Please use lots of space and as many pages as you want, so I can include corrections or comments - otherwise I will ask you to redo it. You do not need to write the questions, but it is very important that you explain your answers and show clearly any work you had to do. Each question is worth 3 points for a total of 9.

Section 1.2 Applications of propositional logic

(1) Use three propositions p, q and r to convert this sentence into a compound proposition: "If it is not raining or my friend is free then I will go to the park". Explain what p, q and r say.

(2) Are these system specifications consistent?

- Whenever the system software is being upgraded, users cannot access the file system.
- If users can access the file system, then they can save new files.
- If users cannot save new files, then the system software is not being upgraded.

(Translate these into 3 compound propositions and use a truth table to see if they can all be true together.)

(3) On the island of Knights and Knaves, the Knights only say true things and the Knaves only say false things. You meet two people A and B.

A says "B is a knave"
B says "We're both knights"

Decide if A and B are knights or knaves and explain your answer.

Many of you are using AI to help with homework questions. You can paste them in and get step by step answers most of the time. If you are using AI, the smart way is:

- Study the relevant class notes and section in the textbook first.
- Try the homework questions yourself.
- Use AI help if you're having trouble.
- Make sure you understand the answers you're handing in - there will be similar questions on exams.

If you're still stuck on a question:

- Ask me about it after class.
- Come to my office hours: Mon 12:00 - 1:00, Wed 12:00 - 1:00 in CP 317.
- Go to the Math Tutorial Lab in-person in CP 303 or online.