

Homework #3, Due: 1/31  
Math 181 (Discrete Structures), Spring 2024

Problem 1 is worth 10 points, for a total of 10 points. Remember to *show your work* and *explain your answers* on all problems!

1. For each of the following arguments, convert the argument into a symbolic form and then determine (with proof) if it is valid or not.
  - (a) Hypotheses: If today is Friday, then I have math class. I have math class.  
Conclusion: Today is Friday.
  - (b) Hypotheses: If the band is really good or the CD is cheap, then I'll buy the CD. The band is really good. I'll buy the CD player.  
Conclusion: I'll buy the CD and the CD player.
  - (c) Hypotheses: If there is gas in the car, then I will go to the store. If I go to the store, then I will get a soda. I do not get a soda.  
Conclusion: There is not gas in the car, or the car transmission is defective.
  - (d) Hypotheses: If it is raining and I packed a lunch, then I will eat at my desk. I packed a lunch, but it is not raining.  
Conclusion: I will not eat at my desk.