

Logic Exercises for Week 1:

- Convert the following propositional logic sentences first into Conjunctive Normal Form and then into Disjunctive Normal Form:
 - $(p \wedge q) \vee ((\neg r \vee \neg s) \wedge (p \rightarrow q))$
 - $(a \rightarrow \neg b) \wedge (\neg b \vee c) \wedge (a \wedge \neg c)$
 - $((p \vee q) \wedge (\neg p \wedge (q \vee \neg r) \wedge (\neg s \vee \neg q))) \vee \neg q$
- Consider all of the logical connectives discussed in class. Identify at least two minimal subsets of these connectives that are adequate to express all of the others.