Challenge

1. Given the following statements, determine if they are logically equivalent using a truth table:
    a. $p \vee (p \wedge q) \equiv p$
    b. $p \wedge (q \vee r) \equiv (p \wedge q) \vee (p \wedge r)$

2. Label each predicate and then rewrite the argument using the logical connectors. Determine if this argument is valid or invalid.
    a. If I go to the movies, then I won't finish my homework.
    If I don't finish my homework, then I won't do well on the test tomorrow.
    Therefore, if I go to the movies, then I won't do well on my test.

3. Use the set of conditional laws to verify the logical equivalences:
    $(p \rightarrow q) \wedge (p \vee q) \equiv q$