Logic Homework Exercises #2 (Conditional/Biconditional Statements)
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Instructions.   In exercises 1-7 let p be the statement "It is raining." and let q be the statement: "I will play golf." Write each statement in symbolic form.

1. I will play golf only if it is raining.

2. If it is raining, then I will play golf.

3. It will be raining if I play golf.

4. Rain will be a necessary and sufficient condition for me not to play golf.

5. Rain will be a sufficient condition for me not to play golf.

6. It will not rain if and only if I play golf.

7. My playing golf will be a necessary and sufficient condition for it to rain.

In exercises 8-11, construct a truth table for the statement given.

8. $(p \longleftrightarrow q) \vee r$

9. $p \longleftrightarrow (q \vee r)$

10. $(\neg p \rightarrow q) \wedge r$

11. $\neg p \rightarrow (q \wedge \neg r)$