* Questions:

1) What is meant by formal logic?

2) What are the advantages of learning to do logic formally?  (There are answers on both p. 2 and p. 9)

3) Why can't we study logic by learning only about formal logic?

4) What is a proposition?

5) What are the 5 logical connectives defined by truth tables in Section 1.1.3?

6) What does it mean for two statements (or two statement forms) to be logically equivalent?

7) What example does the book give of two statements that are logically equivalent?  What example does the book give of two statements are not logically equivalent?

* Answers:

1) The book says that formal logic is really "logical not-thinking." Formalism allows you to work without having to think about what all the symbols mean.

2) One of the advantages of doing logic formally is formal calculations are less prone to error. Another advantage of formal logic is formal logic can deal with more complicated situations, where our common sense might fail us.

3) We can't study logic by learning only about formal logic because sometimes the statements can be too difficult to solve accurately with just your common sense.

4) A proposition is a declarative sentence that is either true or false, but not both.

5) The 5 logical connectivities defined by the truth tables in section 1.1.3 are "and," "or," "not," "implies (if ... then)," and "if and only if." Some people write "iff" for "if and only if."

6) What is meant when two statements are logically equivalent is that they have the same T/F values for all cases, that is, they have the same truth tables.

7) The example the book gives of two statements that are logically equivalent is "If a quadrilateral has a pair of parallel sides, then it has a pair of supplementary angles" and "If a quadrilateral does not have a pair of supplementary angles, then it does not have a pair of parallel sides." They are logically equivalent because their truth tables are equal. The example the book gives of two statements that are not logically equivalent is "If a quadrilateral has a pair of supplementary angles, then it has a pair of parallel sides" and "If a quadrilateral has a pair of parallel sides, then it has a pair of supplementary angles." They are not logically equivalent because their truth tables are not equal.