Day 5.   More elaborate solutions to some problems in Lessons 3 and 4.

After talking with one student, I have decided that the full solutions in the back of the book don't has as much as I'd like on some of these problems.   So I'm giving you more.   I'm not saying that you have to write all of this to have a correct solution. I'm showing you some steps you could use to think through how to solve the problem.

p. 69. Problems 49-56. Instructions: Rewrite each statement using the words "If…then"

p. 69. 49. Original Statement: I'll take a break if I finish my workout.
Original statement rewritten as in example: (It already is in that form.)
Statement rewritten in symbols: B = I'll take a break.   F = I'll finish my workout.
                                                B if F.
Statement written in "if , then" in symbols: If F, then B.
Statement written in "if, then" in words: If I finish my workout, then I'll take a break.

p. 69. 51. Original Statement: To qualify for this deduction, it is necessary for you to complete Form 3093.
Original statement rewritten as in example: Completing Form 3093 is necessary to qualify for this deduction.
Statement rewritten in symbols: C = completing Form 3093.   Q = qualify for this deduction.
                                          C is necessary for Q.
Statement written in "if , then" in symbols: If Q, then C.
Statement written in "if, then" in words: If you qualify for this deduction, then you complete Form 3093.

p. 69, 53. Original Statement: You will receive a free cell phone only if you sign up before March 1.
Original statement rewritten as in example: (It already is in that form.)
Statement rewritten in symbols: F = receive a free cell phone   S = Sign up before March 1.
                                          F only if S.
Statement written in "if , then" in symbols: If F, then S.
Statement written in "if, then" in words: If you receive a free cell phone, then you sign up before March 1.

p. 69, 55. Original Statement: To get a reduction on your auto insurance, it is sufficient that you remain accident free for three years.
Original statement rewritten as in example: Remaining accident free for three years is sufficient to get a reduction on your auto insurance.
Statement rewritten in symbols: F = remaining accident free for three years.   R = get a reduction.
                                          F is sufficient for R
Statement written in "if , then" in symbols: If F then R.
Statement written in "if, then" in words: If you remain accident free for three years, then you get a reduction on your auto insurance.

Page 77.
11. V = laptop has enhanced video card, O = laptop has optical disk drive
Given: V or O
Given: not V
Conclusion: O
This is a valid argument.   The reason is the "meaning of or". (also called disjunctive syllogism)

15. W = watch *The Apprentice*, S = succeed in business, N = have a skyscraper named after you
Given: If W, then S
Given: If S, then N.
Conclusion: If W, then N.
This is a valid argument.   The reason is "Chain." (Also called the law of syllogism.)
Footnote: This is one of those examples to point out that we are analyzing the structure of the argument, not discussing the truth of the individual given statements or the individual given compound statements. Clearly the given compound statements are false, but the structure of the argument is valid.   The fact that some of the given statements are false means that we don't have to believe the conclusion even though we find that the structure of the argument is valid.