Phil 102—Morrissey **SHORT-CUT METHOD (Proof of Invalidity)**

[this is described on pgs. 327-329 in the book--it's called the short truth-table method]

STRATEGY: We want to see if the argument is INVALID. What will show that it is invalid is if we can make all the premises true and the conclusion false (and we'll do that by assigning truth values to the simple sentences (letters) in the argument). If we CAN make all the premises true and the conclusion false, that means that the argument is **INVALID**. If it's not possible, that means that the argument is valid.

HOW TO BEGIN:

(1) Start **anywhere** in the argument where you're forced to make a truth value assignment. That is, start at any premise where there's only one way for that premise to turn out true OR start with the conclusion if there's only one way for the conclusion to turn out false.** That's what it means to be *forced*.

**Sometimes you may not be forced to assign truth values for an ENTIRE premise or conclusion, but you may be forced to assign values for PART of a premise or conclusion.

(2) Continue to ask, "Am I forced?" at each step as you work through the argument--and work only on those sentences (or parts of sentences) where you're forced to assign truth values.

SHORT CUT METHOD HOMEWORK I

1)
~S--> P
Q --> R
~Q --> P
~S --> R

2)
P v Q
~R --> ~Q
P --> S
R v S

3)
P --> Q
~R --> (S & T)
R v (P v S)
~R
Q & T

4)
P --> Q
P --> R
~(Q v R)
~P & R

5)
(I v J) --> (I & J)
~(I v J)
~(I & J)

6)
P v ~Q
~ (~R & S)
~(~P & ~S)
~ Q --> R

7)
L --> H
L --> (H --> F)
H --> (F --> G)
L --> G

8)
A --> B
B --> C
C --> A
A --> ~C
~A
A & ~C

9)
(A --> B) & (C --> E)
(A & C) --> (B v E)

10)
P --> R
R --> Q
~Q v P

ANSWERS TO SOME OF THE ABOVE

1) Invalid (start in conclusion, then 1st premise, 2nd, then 3rd, or concl., 2nd, 1st, 3rd))

S	P	Q	R
F	T	F	F

3) Invalid (start in 4th premise, then work in 2nd premise, then conclusion, then 1st premise)

P	Q	R	S	T
F	F	F	T	T

5) Valid (start with either the 2nd premise or the conclusion)

I	J
T	T

(if you start with conclusion) or

I	J
F	F

(if you start in the 2nd premise)

7) Valid (start in conclusion, then 1st premise, then 2nd or 3rd premise)

L	H	F	G
T	T	T/F	F

8) Invalid (start with 5th premise, then work in 3rd premise, then 2nd premise)

A	B	C
F	F	F