PHL 102
Mock Midterm Exam

The real midterm will be as much like the homework as possible. So, what you see below is just more of what you've been doing. You can check your work on the Mock Midterm Answers and Links page.

I. Basic Concepts

Multiple Choice: Click on the correct answer and the page will jump forward to the next problem.

1. A deductive argument is defined so that the following is true.
a. it is meant to give reasons ensuring the conclusion must be true b. it is valid c. it is sound if valid d. none of the above

2. Any argument must be made up of
a. Exactly one conclusion b. Exactly two premises c. Statements including a conclusion d. All of the above

3. An example of a statement is the following:
a. Yuck! b. I think. c. Do I exist? d. All of the above.

4. Consider the famous idea by Rene Descartes (the mathematician and natural philosopher who also invented Cartesian coordinates)"I think, therefore I am". Which is true?
a. This is an argument b. "Therefore" is a conclusion indicator c. I think is the premise d. All of the above.

5. An inductive argument is
a. normally formal b. normally informal c. normally valid d. normally cogent

6. Which of the following is normally a premise indicator?
a. if b. then c. because d. hence

7. An argument of the form MT could be properly diagramed in Araucaria tree diagram style with
a. simple arrows b. a single merging arrow c. a single simple arrow
d. all of the above

8. A sound deductive argument is be definition
a. valid and has all true premises b. valid and has all false premises c. invalid but has all true premises d. invalid but has all false premises

9. A strong inductive argument
a. is valid b. has a conclusion that must be true c. has a false conclusion that might have been true d. none of the above

10. A cogent inductive argument by definition
a. is strong and has all true premises b. is a weak deductive argument c. is sound but has false conclusion d. none of the above

II. SL Multiple Choice

1. Which of the following is a correctly constructed sentence of SL?
   a. (AvCvD) b. (Av(C~D)) c. ((AvD)v~D) d. (AvD)~D

2. Which of the following is a correctly constructed sentence of SL...allow the removal of outside parentheses?
   a. ~Cv(~D⊃T) b. ~~C c. (A⊃B)≡(~B⊃~A) d. all of the above

3. The main connective of ~(AvB)⊃~R is
   a. ~ b. v c. ⊃ d. none of the above

4. Which of the following is a conditional?
   a. (A&B)⊃(C≡D) b. ((A&B)⊃C)≡D) c. A&(B⊃(C≡D)) d. none of the above

5. If A and B are both false, then which of the following is true?
   a. A⊃B b. ~(AvB) c. A≡B d. all of the above

III. Symbolizations

Use the following interpretation to symbolize 1 - 10 in the space provided.

B: Bush is a philosopher.
H: Hobbes is a philosopher.
M: Madden is a philosopher.

Help!

1. Both Bush and Madden are philosophers.
2. If Madden is a philosopher then so is Bush..
3. Neither Bush nor Madden is a philosopher.
4. Either Hobbes or Bush is a philosopher.
5. Bush is a philosopher just in case Madden is.
6. Bush is not a philosopher if Madden is. (hint)
7. If Bush is a philosopher then Hobbes is not.
8. If neither Bush nor Madden is a philosopher, then Hobbes is a philosopher.
9. Bush is a philosopher unless Hobbes and Maddden are not both philosophers.
10. Hobbes is a philosopher only if Bush is not. (hint)

IV. Truth Tables

a. Do the following one-row tables after marking the main connective.

A	B	C	~	[(B	v	C)	≡	A]
T	F	T						

B	C	L	R	[~	(L	v	R)	⊃	(~	B	&	C)]
T	T	F	F									

b. Do a truth table test to show that the following sentence, (A&B)⊃(BvA), is logically true (a tautology), logically false (a self-contradiction) or contingent (neither of the other two).

A	B	[(A	&	B)	⊃	(B	v	A)]
T	T							
T	F							
F	T							
F	F							

c. Do a truth table test to show that the following two sentences, F⊃~O and ~O≡~F, are logically equivalent or not.

F	O	[F	⊃	~	O]	,	[~	O	≡	~	F]
T	T	T			T			T			T
T	F	T			F			F			T
F	T	F			T			T			F
F	F	F			F			F			F

d. Do a truth table test for validity of the following argument:

(A&J)⊃T

J≡T

~A

A	J	T	[(A	&	J)	⊃	T]	,	[J	≡	T]	/	~	A
T	T	T	T		T		T		T		T			T
T	T	F	T		T		F		T		F			T
T	F	T	T		F		T		F		T			T
T	F	F	T		F		F		F		F			T
F	T	T	F		T		T		T		T			F
F	T	F	F		T		F		T		F			F
F	F	T	F		F		T		F		T			F
F	F	F	F		F		F		F		F			F

V. More Multiple Choice

More Multiple Choice

1. Which of the following sentences is symbolizes "Chris got an A but is unhappy". (Use our normal symbolization key.)

a. A∨~H b. ~A≡H c. A&~H d. ~A⊃H

2. When we symbolize, we can pick any symbolization that is logically equivalent to the original. So, if you are to symbolize "Chris got neither an A nor a B", you might use ~(A∨B). WHICH OTHER SYMBOLIZATION WOULD DO JUST AS WELL BECAUSE IT'S LOGICALLY EQUIVALENT TO THIS ONE?

a. ~A∨~B b. ~A&~B c. A≡~B d. ~A⊃~B

3. What does it mean for sentence X to be logically equivalent to sentence Y? Pick one...

a. X and Y are both true. b. It is possible for X and Y both to be true. c. It is impossible for X and Y to differ in truth value. d. It is impossible for X and Y to be both true and false.

4. "There is fire only if there is oxygen" is logically equivalent to which of the following?

a. If there is fire, then there is oxygen. b. Oxygen is a necessary condition for fire. c. There is no fire unless there is oxygen. d. All of the above

5. Symbolize "Chris didn't get an A yet is happy".

a. ~A&H b. ~(A&H) c. ~A≡~H d. A⊃~H

VI. Argument Diagramming and Evaluation

For each of the following arguments, identify the type of argument and evaluate as well as you can given the tools we've learned. E.g., Is the argument inductive or deductive? Strong or valid? Cogent or sound? What type of argument is it (e.g. an analogy for inductive logic, or MT for deductive)? Do we have a way to evaluate it fully?

a. Argument 1: If Chris got an A or a B, then she's now happy. She did get an A. So, she's happy.
b. Argument 2: I've spoken with three PHL 102 students this term about my Logic Café. I asked each if the Café was a good thing. None of them said "no". So I guess all students love the Logic Café. [Notice that this passage would seem to be written by the too-proud author of a textbook. But what's wrong with the thinking?]
c. Argument 3: Any argument under posting 3 in your group. Evaluate another one for a second commentary and necessary practice for the argument I've promised to put on the exam. [That's right, I've given it away. This in the Topic 7 materials.]

VII. Various…

Other Matters

Multiple Choice: Click on the correct answer and the page will jump forward to the next problem.

1. Consider this argument: "The ball went through the neighbor's window. So the result will be damage I have to pay for".
   a. Generalization b. Statistical Inference c. Causal Reasoning d. Analogy

2. Consider this argument: "90% of OU logic students learn to love logic. Sam is an OU logic student, so she will likely learn to love logic."
   a. Generalization b. Statistical Inference c. Causal Reasoning d. Analogy

3. Consider this argument: "I have spoken with 10 of the 70 class members on WebEx about derivations. All 10 found them difficult at first but almost fun after they got used to them. So, I suspect that most all class members will find derivations difficult at first but not so bad if they keep working on them."
   a. Generalization b. Statistical Inference c. Causal Reasoning d. Analogy

4. Which argument is of the (invalid, fallacious!) form DA?
   a. If there is fire, then there is oxygen. There is fire, so there is oxygen. b. If there is fire, then there is oxygen. There is oxygen, so there is fire. c. If there is fire, then there is oxygen. There is no fire, so there is no oxygen. d. If there is fire, then there is oxygen. There is no oxygen, so there is no fire.

5. Which argument is of the (invalid, fallacious!) form AC?
   a. If there is fire, then there is oxygen. There is fire, so there is oxygen. b. If there is fire, then there is oxygen. There is oxygen, so there is fire. c. If there is fire, then there is oxygen. There is no fire, so there is no oxygen. d. If there is fire, then there is oxygen. There is no oxygen, so there is no fire.

6. Which argument is of the (valid!) form MP?
   a. If there is fire, then there is oxygen. There is fire, so there is oxygen. b. If there is fire, then there is oxygen. There is oxygen, so there is fire. c. If there is fire, then there is oxygen. There is no fire, so there is no oxygen. d. If there is fire, then there is oxygen. There is no oxygen, so there is no fire.

7. Which argument is of the (valid!) form MT?
   a. If there is fire, then there is oxygen. There is fire, so there is oxygen. b. If there is fire, then there is oxygen. There is oxygen, so there is fire. c. If there is fire, then there is oxygen. There is no fire, so there is no oxygen. d. If there is fire, then there is oxygen. There is no oxygen, so there is no fire.

VIII. Derivations

a. This one takes just two steps to finish. So, you'll be done by line 5 if you're efficient. You'll use two of our three rules: MP, MT, DS.

Premise	1	RvT
Premise	2	T⊃L
Premise	3	~R
	4	
	5	
	6	
	7	
	8	
???	9	L???

b. A little harder…you might interpret this in terms of Chris being happy or working harder given her grades! But mostly you should just follow procedures independently about what the atomic sentences may mean.

Premise	1	AvB
Premise	2	A⊃H
Premise	3	B⊃W
Premise	4	~H
	5	
	6	
	7	
	8	
???	9	W???