PHIL 100 §§0203,0205,0207 Selected Answers Logic Exercises I,II

I.a) Answered in detail in Handout I see page 5-6

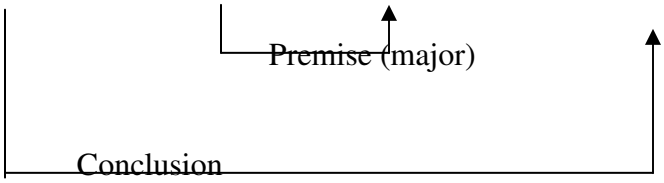
M S P M S

↓ ↓ ↓ ↓ ↓

I.b) "All horses are knaves, **so it follows that**, **since** some pintos are horses, some knaves are not pintos."

↑

P



- "so it follows that…" (conclusion indicator)
- "since…" (premise indicator)

A premise is stuck between the conclusion indicator and its conclusion (underlined)

P-term: Pintos **S-term:** Knaves **M-term:** Horses

Standard Syllogistic form:

Some P are M
All M are S
Some S are not-P

IAO_4 mood and figure

Validity

Rule	**Justification**
A	OK, neither major nor minor premises are negative
B	**NO Pass- Conclusion in particular-negative, but neither premises are negative**
C	OK, M is distributed in minor premise (since it's the subject of an A-form)
D	**NO Pass- P is distributed in conclusion (it's the predicate of an O-form) but P is not distributed in major premise (it's the subject of an A-form)**
E	OK by default, only minor premise is universal (both premises must be universal for rule to take effect.)

I.c) Answered in detail in Handout I (September 9 & 16), see page 6

Id.) "Some golf clubs are woods, and some golf clubs are irons, **so** [no irons are woods]."

Conclusion (bracketed after indicator 'so'): **S:** Irons **P:** Woods
M: Golf clubs

Standard Syllogistic form: **Some M are P**
<u>Some M are S</u>
No S are P

IIE_3 mood and figure

Validity

Rule	Justification
A	OK, neither major nor minor premises are negative
B	**NO Pass- Conclusion in universal-negative, but neither premises are negative**
C	**NO Pass- M isn't distributed in either premises (M is the subject of an I-form)**
D	**NO Pass- P is distributed in conclusion (it's the predicate of an E-form) but P is not distributed in major premise (it's the predicate of an I-form) Moreover, S is distributed in conclusion (it's the subject of an E-form) But S is not distributed in minor premise (it's the predicate of an I-form)**
E	OK by default, only minor premise is universal (both premises must be universal for rule to take effect.)

I.e) Answered in Handout I see page 7

If.) "Since all fir trees are evergreens, and some awe-inspiring objects are fir trees, **it follows that** [all awe-inspiring objects are evergreens]."

Conclusion (bracketed after indicator 'so'): **S:** Awe-inspiring objects
P: evergreens
M: fir trees

Standard Syllogistic form: **All M are P**
<u>Some S are M</u>
All S are P

AIA_1 mood and figure

Validity

Rule	Justification
A	OK, neither major nor minor premises are negative
B	OK by default, neither major nor minor premises are negative, and the conclusion's a universal affirmative.
C	OK, M is distributed in major premise (it's the subject of an A-form)
D	**NO Pass- S is distributed in conclusion (it's the subject of an A-form) but S isn't distributed in minor premise (it's the subject of an I-form.)**
E	OK by default, only major premise is universal (both premises must be universal for rule to take effect.)

Ig.) "[No bats are dogs], **since** {no dogs are cats}, **and** {no bats are cats}."

Here the conclusion indicator is suppressed. However, we can infer the conclusion from the premise indicators **since**{…} **and** {…}. The word "**and"** functions as a premise indicator as well, because we're giving another reason for the judgment.

Conclusion (bracketed): **S:** Bats **P:** dogs
M: cats

Standard Syllogistic form:
No P are M
No S are M
No S are P

EEE_2 mood and figure

Validity

Rule	Justification
A	**NO Pass- Both major and minor premises are universal negation**
B	OK, both major nor minor premises are negative, and the conclusion's a universal negation.
C	OK, M is distributed in major (and also in minor) premise (it's the predicate of an E-form)
D	OK- S is distributed in conclusion (it's the subject of an E-form) and S is distributed in minor premise (it's the subject of an E-form.) **(case 1)** OK- P is distributed in conclusion (it's the predicate of an E-form) and P is distributed in major premise (it's the subject of an E-form.) **(case 2)**
E	OK Both premises are universal and the conclusion is universal

I.h) Answered in Handout II (September 23), see page 10

I.i) "No movie actors are accountants, but all accountants are college graduates**; it follows from these premises that** [no movie actors are college graduates.]"

Conclusion (bracketed): **S:** Movie actors **P:** college grads
M: accountants

Standard Syllogistic form:
All M are P
No S are M
No S are P

AEE_1 mood and figure

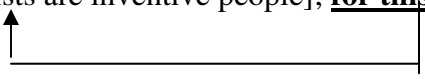
Validity

Rule	Justification
A	OK, only minor premise is negative

B	OK, major premise is universal negative, and the conclusion's a universal negation.
C	OK, M is distributed in minor premise (it's the predicate of an E-form)
D	S is distributed in conclusion (it's the subject of an E-form) and S is distributed in minor premise (it's the subject of an E-form.) **P is distributed in Conclusion but not in major premise (an A-form)**
E	OK by default – only the major premise is universal

So the above argument is invalid

I.j) "[All scientists are inventive people]; **for this reason** {some inventive people are not



Americans}, **inasmuch as** {some scientists are not Americans}."

Just like in I.g) the conclusion indicator is suppressed. Note that the phrase "for this reason" modifies the first phrase ("All scientists are inventive people.") So the conclusion is "some inventive people are not Americans." The connective phrase **"inasmuch as"** function like the "**and"** in I.g: because we're giving another reason for the judgment.

Conclusion (bracketed): **S:** Inventive people **P:** Americans
M: Scientists

Standard Syllogistic form:
Some M are not-P
All M are S
Some S are not-P

OAO_3 mood and figure

Validity

Rule	**Justification**
A	OK – Only one premise is negative (major: particular neg.,i.e. O-form)
B	OK-Major premise is negative, as well as the conclusion
C	OK – M is distributed in minor premise (it's the subject of an A-form)
D	OK – P is distributed in conclusion, as well as in major premise (predicate of an O-form)
E	OK by default – major premises is particular

IIa.) "All humans are mortals, **so** [Michael Jackson is mortal], for Michael Jackson is human."

Conclusion (bracketed):
S: Michael Jackson (unit class-singularly referring expression) **P:** mortal beings
M: human beings

Standard Syllogistic form:

All M are P
All S are M
All S are P

AAA_1 mood and figure

Validity

Rule	**Justification**
A	OK, no negative premises
B	OK –no negative premises, and no negative conclusion
C	OK, M is distributed in mmajor premise (it's the subject of an A-form)
D	OK- S is distributed in conclusion (it's the subject of an A-form) and S is distributed in minor premise (it's the subject of an A-form.)
E	OK both premises are universal, and so is the conclusion

IIb.) "Tigers, all of them, are carnivorous, Jim's pet is a tiger, **hence** [Jim's pet is carnivorous]." ↑

A universal quantification ("all") (Recall the table in pages 8-9 of Handout II (Sept 23).) The quantifier refers, of course, to tigers.

Conclusion (bracketed):
S: Jim's pet (unit class-singularly referring expression) **P:** carnivorous beings
M: tigers

Standard Syllogistic form:

All M are P
All S are M
All S are P

AAA_1 mood and figure

Validity (See IIa.) above)

IIc.) "Not every animal is tame, some animals are red, **so** [some tame animals are red animals.]"

Conclusion (bracketed):

S: Tame animals **P:** red animals
M: animals
Note1: In this case, P is a subclass of M

Note2: "Not every animal is tame [animal]" gets translated as: "Some animals are not tame animals"

Standard Syllogistic form:

Some M are P
Some M are not S
Some S are P

IOI_3 mood and figure

Validity

Rule	Justification
A	OK, only minor premise is negative
B	**No Pass –minor premise is particular negative but the conclusion is affirmative**
C	**No Pass – M is the subject of an I and O form for the major and minor premises, respectively, which in both cases isn't distributive**
D	OK by default, neither S nor P distribute (as they're subjects and predicates in an I form)
E	OK by default, both premises are particular