

Philosophy 60
 Test 2 Solution

Instructions: Translate the following sentences into official wffs using the following key. Pay attention to commas to resolve any ambiguity. (10 pts.)

C= Charley chokes. S = Sam smokes. T = Tom takes.

1. (2 pts.) Sam smokes, or if Sam doesn't smoke, Tom takes.

(S v (~S → T))

2. (2 pts.) Charley chokes whenever Sam smokes and Tom takes.

((S & T) → C)

3. (2 pts.) If neither Tom takes nor Sam smokes, then Charley does not choke.

(~(T v S) → ~C)

4.(2 pts.) If Tom takes then Sam smokes, unless Charley chokes.

(~ (T → S) → C)

5. (2 pts.) Only if Tom doesn't take and Sam doesn't smoke will Charley not choke.

(~C → (~T & ~S))

Instructions: Translate the following argument and evaluate it as valid or invalid using the table below. Explain how the table justifies your answer. Put the ⊢ sign in between the premise and the conclusion. (Note: You will not need all three lines. They are just there in case you make a mistakes and want to start over.) (5 pts.)

1. If neither Sam smokes nor Tom Takes, then Charley chokes. Therefore, if neither Charley chokes nor Sam smokes, then Tom takes.

S	T	C	(~	(S	v	T)	→	C)	⊢	(~	(C	v	S)	→	T)	
F	F	F	T/F	F	F	F	T	F		T	F	F	F	F	F	

This is valid because assigning true to the premise and false to the conclusion results in a contradiction, here shown as the requirement that the first ~ be assigned both T and F.

Extra Credit: (1 pts.); Charley chokes if Sam smokes and Tom takes, but if Tom takes and Sam doesn't smoke or Sam smokes and Tom doesn't take, then Charley doesn't choke.

(((S & T) → C) & ((T & ~S) v (S & ~T)) → ~C)