

PHIL 331/MATH 281: Selected Answers for Week 7

Formalizing English sentences

Interpretation	Formalization
v. 'A': 'Mr Jones is happy' 'B': 'Mrs Jones is happy'	' $((A \rightarrow \neg B) \wedge (\neg A \rightarrow \neg B))$ '
w. 'A': 'Adam will go to the party' 'B': 'Barbara will go to the party' 'S': 'Alcohol will be served at the party' 'C': 'Cindy is invited to the party'	' $((A \rightarrow (B \wedge S)) \wedge (C \rightarrow \neg A))$ '
x. 'S': 'Sam will come to the party' 'M': 'Max will come to the party' 'E': 'Max will enjoy himself'	' $((S \wedge \neg M) \vee (\neg S \wedge E))$ '
y. 'W <sub>1</sub> ': 'I went to the party' 'I <sub>1</sub> ': 'I was invited to the party' 'W <sub>2</sub> ': 'Adam went to the party' 'I <sub>2</sub> ': 'Adam was invited to the party'	' $((\neg I_1 \rightarrow \neg W_1) \wedge ((I_2 \rightarrow W_2) \wedge (\neg I_2 \rightarrow W_2)))$ '
z. 'N': 'The newspaper reports are correct' 'A': 'All members of GG have been arrested' 'C': 'All members of GG will be convicted' 'B': 'The DA has been bribed' 'T': 'The DA has been threatened'	' $((N \wedge A) \rightarrow (C \leftrightarrow \neg(B \vee T)))$ '

Formalizing English arguments

- j. ' $(F \rightarrow W)$ '  $\vDash$  ' $((F \wedge S) \rightarrow W)$ '  
Correct
- k. ' $(F \rightarrow (D \rightarrow T))$ ', ' $(F \rightarrow D)$ '  $\vDash$  ' $(F \rightarrow T)$ '  
Correct
- l. ' $(D \vee (I \wedge S))$ ', ' $(D \rightarrow L)$ ', ' $(L \rightarrow S)$ '  $\vDash$  ' $S$ '  
Correct
- m. ' $(I \rightarrow (S \vee U))$ ', ' $(\neg S \rightarrow T)$ ', ' $((T \wedge I) \rightarrow \neg U)$ '  $\vDash$  ' $S$ '  
Incorrect
- n. ' $(B \rightarrow (E \wedge F))$ ', ' $(E \rightarrow W)$ ', ' $(F \rightarrow L)$ ', ' $(\neg B \rightarrow T)$ '  $\vDash$  ' $((W \wedge L) \vee T)$ '  
Correct