

Homework 1

This homework requires only material from lecture and precepts; there is no need to refer to any material in the Lemmon book. Your preceptor will tell you when the assignment is due.

1. Translate each of the following sentences into symbolic form. First identify the elementary component sentences, and abbreviate each with a (distinct) capital letter. Then translate the original sentence using the symbols \vee , $\&$, \neg , \rightarrow for the logical words “or”, “and”, “not”, “if... then...”. (Recall that an “elementary” component sentence is one that does not itself contain logical words. We have suggested letters for the elementary sentences at the end of each sentence.)
 - (a) It’s just not true that if Jane Austen wrote a book then it has a happy ending. (W, H)
 - (b) Hegel was neither a great philosopher nor a great historian (P, H)
 - (c) Sieglinde will survive, and either her son will gain the Ring and Wotan’s plan will be fulfilled or else Valhalla will be destroyed. (S, G, F, D)
 - (d) Wotan and Alberic will not both be satisfied. (W, A)
2. Prove that the following argument forms are valid. The premises are numbered, and the conclusion is to the right of the “//”. You may use the following rules of inference: MPP, MTT, DN, $\&$ I, $\&$ E, \vee I.

- (a)

(1)	$P \rightarrow (Q \rightarrow R)$	
(2)	$P \rightarrow Q$	
(3)	P	// R
- (b)

(1)	$\neg \neg Q \rightarrow P$	
(2)	$\neg P$	// $\neg Q$

- (c) (1) $(A \vee B) \rightarrow T$
 (2) $Z \rightarrow A$
 (3) $T \rightarrow W$
 (4) $Z \quad // \quad W$

- (d) (1) $(A \rightarrow B) \& (C \rightarrow A)$
 (2) $(C \& (W \rightarrow Z)) \& W \quad // \quad (B \vee D) \& (Z \vee E)$