

DERIVATIONS IN SYSTEM G

Directions: Using the derivation system presented in the chapter “Categorical Logic”, construct derivations of the following argument forms in **System G**, including line indices.

[Note to logic veterans; System G is **not** a superset of **classical SL**, so you are not entitled to appeal to the "SL rule", which of course would be **begging the question**.]

1.	Transitivity	$B \rightarrow C ; A \rightarrow B \vdash A \rightarrow C$
2.	Permutation	$A \rightarrow (B \rightarrow C) \vdash B \rightarrow (A \rightarrow C)$
3.	Secondary <i>Modus Ponens</i>	$A \rightarrow (B \rightarrow C) ; B \vdash A \rightarrow C$
4.	Extended <i>Modus Ponens</i>	$B \rightarrow C ; A \vdash (A \rightarrow B) \rightarrow C$
5.	Extended Transitivity	$C \rightarrow D ; A \rightarrow B \vdash (B \rightarrow C) \rightarrow (A \rightarrow D)$
6.	Lifting	$A \vdash (A \rightarrow B) \rightarrow B$
7.	Inflection	$(A \rightarrow C) \rightarrow D ; A \rightarrow B \vdash (B \rightarrow C) \rightarrow D$
8.	Generalized Conjunction	$B \rightarrow (B \rightarrow C) ; A \rightarrow B ; A \rightarrow B \vdash A \rightarrow C$