

1	0	1	0	1	0	1	0
$\alpha \wedge \beta$			$\alpha \wedge \beta$	$\alpha \vee \beta$			$\alpha \vee \beta$
α		#1:	α	#1:	α		α
β		#2:	β	#2:	β		β

1	0	1	0	1	0	1	0
$\alpha \rightarrow \beta$		*	$\alpha \rightarrow \beta$	$\sim \alpha$	0	*	$\sim \alpha$
#1:	α				0		
#2:	β				0		

\downarrow (introduce a new world)

1	0	1	0
α	β	α	
*		*	

1. Using the definitions, show that the formulas below are intuitionistic tautologies.

- $p \rightarrow p$
- $p \rightarrow \sim \sim p$ (What about $\sim \sim p \rightarrow p$?)
- $\sim p \rightarrow \sim \sim \sim p$

2. Using the method of analytic tables decide whether the following formulas are intuitionistic tautologies.

- (a) $p \vee \sim p$
- (b) $p \rightarrow \sim \sim p$
- (c) $\sim \sim p \rightarrow p$
- (d) $(p \rightarrow q) \vee (q \rightarrow p)$
- (e) $q \vee (q \rightarrow (p \vee \sim p))$