

### Fitch argument

Show that  $\forall x (Tx \rightarrow (Lx \vee Mx))$  given  $\neg \exists x (Tx \wedge Sx)$  and  $\forall y (Sy \vee My \vee Ly)$ . This is how the argument looks like

1		$\neg \exists x (Tx \wedge Sx)$			
2		$\forall y (Sy \vee My \vee Ly)$			
3					
3			$[a]Ta$		
4			$Sa \vee (Ma \vee La)$		
			$\forall$ Elim 2		
5					
5				$Sa$	
6				$Ta \wedge Sa$	
				$\wedge$ Intro 6,7	
7				$\exists x (Tx \wedge Sx)$	
				$\exists$ Intro 6	
8				$\perp$	
				$\perp$ Intro 1,7	
9				$La \vee Ma$	
				$\perp$ Elim 8	
10				$Ma \vee La$	
11					
11					$Ma$
12					$La$
13					$La \vee Ma$
					$\vee$ Elim 1,11,12
14				$La \vee Ma$	$\vee$ Elim 4,5-9,10-13
15		$\forall x (Tx \rightarrow (Lx \vee Mx))$	$\forall$ Intro 3-14		