

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 3,5	
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 10,11,12
14				$La \vee Ma$	
				\vee Elim 4,5-9,10-13	
15		$\forall x (Tx \rightarrow (Lx \vee Mx))$	\forall Intro 3-14		