

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	$[a] Ta$	
4	$Sa \vee (Ma \vee La)$	\forall Elim 2
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	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