

## Fitch argument

Show that  $\forall(x)(Tx \text{implies}(Lx \text{or } Mx))$  given  $\neg\exists(x)(Tx \text{and } Sx)$  and  $\forall(y)(Sy \text{or } My \text{ or } Ly)$ . This is how the argument looks like

1	$\neg\exists(x)(Tx \text{and } Sx)$	
2	$\forall(y)(Sy \text{or } My \text{ or } Ly)$	
3	$\boxed{[a] Ta}$	
4	$Sa \text{or} (Ma \text{or} La)$	<i>any Elim 2</i>
5	$\boxed{Sa}$	
6	$Ta \text{and} Sa$	<i>and Intro 3,5</i>
7	$\exists(x)(Tx \text{and } Sx)$	<i>exists() Intro 6</i>
8	$falsum$	<i>falsum Intro 1,7</i>
9	$La \text{or} Ma$	<i>falsum Elim 8</i>
10	$\boxed{Ma \text{or} La}$	
11	$\boxed{Ma}$	
12	$\boxed{La}$	
13	$La \text{or} Ma$	<i>or Elim 10,11,12</i>
14	$La \text{or} Ma$	<i>or Elim 4,5-9,10-13</i>
15	$\forall(x)(Tx \text{implies}(Lx \text{or } Mx))$	<i>any Intro 3-14</i>