EXAM 15.02.18

$\forall x\,(G(x) \wedge S(x)) \Rightarrow (Eat(x,B) \wedge Eat(x,N))$
$\forall x\,(R(x) \wedge S(x)) \Rightarrow Eat(x,B)$
$\forall x\,(\neg G(x) \wedge S(x)) \Rightarrow R(x)$
$S(Fra)$

Clausal form:
$\neg G(x) \vee \neg S(x) \vee Eat(x,B)$
$\neg G(x) \vee \neg S(x) \vee Eat(x,N)$
$\neg R(x) \vee \neg S(x) \vee Eat(x,B)$
$G(x) \vee \neg S(x) \vee R(x)$
$S(Fra)$

→ $KB = \{\{\neg G(x), \neg S(x), Eat(x,B)\}_1, \{\neg G(x), \neg S(x), Eat(x,N)\}_2, \{\neg R(x), \neg S(x), Eat(x,B)\}_3 \{G(x), \neg S(x), R(x)\}_4, \{S(Fra)\}_5\}$.

The thesis is: $Eat(Fra,Bread) \vee Eat(Fra,Nutella)$. I have to negate it!
$\{\neg Eat(Fra,B)\}_6, \{\neg Eat(Fra,N)\}_7$

1 and 3 $\Rightarrow \{\neg G(x), \neg S(x), \neg R(x), Eat(x,B)\}_8$
2 and 8 $\Rightarrow \{\neg G(x), \neg S(x), \neg R(x), Eat(x,B), Eat(x,N)\}_9$
4 and 9 $\Rightarrow \{\neg S(x), Eat(x,B), Eat(x,N)\}_{10}$
5 and 10 $\Rightarrow \{Eat(Fra,B), Eat(Fra,N)\}_{11}$
6 and 11 $\Rightarrow \{Eat(Fra,N)\}_{12}$
7 and 12 $\Rightarrow \{\}$

Model $M = \{S(Fra), G(Fra), Eat(Fra,B), Eat(Fra,N)\}$
Is possible to replace G with R.