Exercises 04

Consider the Propositional_Logic_Super.thy file and remove the following line:

```
Neg form (‹∼›) |
```

Make simple changes to the file such that all proofs work again.

Add the following lines at the end of the file (or where appropriate):

```
proposition ‹I ⊨ ∼ p = (¬ I ⊨ p)›
  by simp

lemma *: ‹(∀I. ⟦I⟧ X Y) ⟷ (∀I. ⟦I⟧ X (⊥ # Y))›
  by simp

lemma Fls_R: ‹X ⩾ p # Y› if ‹X ⩾ Y›
  using that * OK list.set_intros by meson

lemma Neg_L: ‹∼ p # X ⩾ Y› if ‹X ⩾ p # Y›
  using that Fls_L Imp_L by simp

lemma Neg_R: ‹X ⩾ ∼ p # Y› if ‹p # X ⩾ Y›
  using that Fls_R Imp_R by simp
```

Compare the result to the original Propositional_Logic_Super.thy file.