Weidenbach   **November 21, 2024**

Tutorials for "Automated Reasoning WS24/25"
Exercise sheet 6

Exercise 6.1:
Refute the following clause set using both SCL(FOL) and Superposition. For Superposition you may freely choose an ordering and selection function. As usual one sort for everything and x, y, z are all variables.

$$
\begin{array}{llll}
1 & P(x) \vee Q(b) & 2 \quad P(x) \vee \neg Q(y) & 3 \quad \neg P(a) \vee Q(x) \\
4 & \neg P(x) \vee \neg Q(b)
\end{array}
$$

Exercise 6.2:
Refute the following set of clauses by Superposition, including all redundancy rules and SCL(FOL). For Superposition you can freely choose an ordering and selection function. As usual one sort for everything and x, y, z are all variables.

$$
\begin{array}{llll}
1 & \neg Q(x) \vee \neg R(x, g(x)) & 2 \quad \neg P(x) \vee R(a, x) & 3 \quad P(g(x)) \\
4 & \neg P(g(x)) \vee R(x, x) & 5 \quad S(a) & 6 \quad \neg S(x) \vee Q(x)
\end{array}
$$

It is not encouraged to prepare joint solutions, because we do not support joint exams.