Worksheet 11

Answers

Exercise 11.1 *Breadth-first derivation graph for example 2*

Exercise 11.2 *Set-of-support derivation graph for example 1*

Exercise 11.3 *Unit resolution derivation graph for examples 1 and 2*

Example 1

Example 2

No resolutions are possible: there are no unit clauses.

Exercise 11.4 *Horn clauses or not.*

Example 1.

Horn clauses: $\neg s \vee \neg r,\ q \vee \neg p,\ p,\ r \vee \neg q,\ s$

Non-Horn: none

(Since these were all Horn clauses it comes as no surprise that unit resolution worked.)

Example 2

Horn clauses: $\neg p \vee \neg q,\ p \vee \neg q,\ q \vee \neg p$

Non-Horn: $p \vee q$

(Since these were not all Horn clauses we couldn't guarantee that unit resolution would work, and it didn't!)

Exercise 11.5 *SLD-resolution derivation graph*