

HIGHER SET THEORY
FORMAL DERIVATIONS AND NATURAL PROOFS
EXERCISE SHEET 4

1. Expanding on exercise 3 of exercise sheet 3:

- a) Prove in resolution calculus that $1 + 1 = 2$.
- b) Define the relation $<$ and prove in resolution calculus that $3 < 4$.
- c) Explain how we would reach these proofs using unification.

2. In the language of Prolog, define a fragment of the English grammar which can recognise the following as valid sentences:

Pascal reads a magazine.

The girls are running.

Sofia is a girl.

But not the sentences:

Sofia are running.

A magazine is a girl.

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