Computing and Software 734
Formalized Mathematics
Winter 2008

Exercise 10
20 pts.
Due 16 April 2008

Assigned: 7 March 2008
Revised: 7 March 2008

This exercise is not required; it is for extra credit.

Part 1

Starting from scratch, create an IMPS theory of Peano arithmetic called `peano2` with the constants 0 and S and the following axioms:

1. 0 is not a successor.
2. S is injective.
3. Induction.

Part 2

Define $+$ and $*$ recursively in `peano2` using `def-recursive-constant`.

Part 3

Do parts 2–4 of Exercise 8 using `peano2` in place of `peano1`.