

CSci 1302 Assignment 7

Due Fri., October 31, 2003

Problem 1. Which of the following are valid program refinements? If the refinement is valid, please justify it by one of the rules and show which conditions you have checked. If it's not valid, briefly explain why.

- $n : [even(n), divisible(n^2, 4)] \sqsubseteq n : [even(n), divisible(n_0^2, 4)]$
- $n : [even(n), divisible(n^2, 4)] \sqsubseteq n : [true, divisible(n_0^2, 4)]$
- $n : [even(n), divisible(n^2, 4)] \sqsubseteq n : [divisible(n, 4), divisible(n^2, 4)]$
- $n : [odd(n), divisible(n^2, 4)] \sqsubseteq n : [odd(n), divisible(n^2, 2)]$
- $n : [odd(n), divisible(n^2, 4)] \sqsubseteq n : [odd(n), n = 2]$
- $n : [odd(n), n = 4] \sqsubseteq n : [odd(n), n = 4 \vee n = 2]$

Problem 2. Exercise 9.9, parts 1 through 5.