

Language Based Security

Winter Semester 2007

3. Homework

14 Nov 2007

Exercise 1:

- a) Consider the transformations $\llbracket k \rrbracket^\sharp$ for interval analysis. Are these functions distributive?
- b) Consider the transformations $\llbracket k \rrbracket^\sharp : 2^S \rightarrow 2^S$ for exact analysis of the set of possible concrete states at each node (\mathcal{S} is the set of possible concrete states). Are these functions distributive?

Exercise 2:

Let $f_1, f_2 : \mathbb{D}_1 \rightarrow \mathbb{D}_2$ be two distributive functions. Show that

- a) $f_1 \circ f_2$ is distributive.
- b) $f_1 \sqcup f_2$ is distributive.