Fiftth exercise sheet for the lecture

Syntax Directed Semantics (Part II)

Prof. Dr. Heiko Vogler / Dr. Janis Voigtländer

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Exercise 11
Can *height* be recognized by a wta over a (commutative) semiring with only a single state? ◇

Exercise 12
Argue that equivalence is decidable for unweighted tree automata. ◇

Exercise 13
Show that the sum of two recognizable tree series (over a semiring) is itself recognizable. ◇

Exercise 14
Is it the case that for every semiring-wta $\mathcal{A} = (Q, \Sigma, S, \mu, \nu)$,

$$\mathit{supp}(r_{\mathcal{A}}) = \emptyset \ \text{ iff } \ \forall \xi \in T_\Sigma, \mathit{height}(\xi) < |Q|.\ (r_{\mathcal{A}}, \xi) = 0 \ \ ?$$ ◇