TD 13

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Exercise 1. We consider Presburger hedge automata (PHA), where transitions are of the form:

$$a(R \wedge \phi) \to q$$

where R is a regular language and ϕ is a Presburger formula. The semantics is the natural one, combining Presburger and hedge semantics.

1. Show that $a(b^n c^n b^m c^m)$ is accepted by a PHA
2. Show that the above language is not accepted by a DPHA (what does deterministic mean?)
3. Show that the membership problem for PHA is decidable in polynomial time.
4. Show that the emptyness problem for PHA is decidable.
5. Show that the universality problem for PHA is undecidable.