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SS 12

## Exercises for Limits of Computational Learning

<http://www.mpi-inf.mpg.de/departments/d1/teaching/ss12/learning/>

Assignment 6

Deadline: Wed 14.6.2012, 10am

**Exercise 1** (4pts) Show that

$$\mathcal{S}_{\text{FinSup}} \cup \mathcal{S}_{\text{SD}} \notin \mathbf{GBc}.$$

**Exercise 2** (4pts) Let  $a, b \in \mathbb{N} \cup \{*\}$ . Show that

$$\mathbf{GEx}^a \subset \mathbf{GEx}^b.$$

**Exercise 3** (4pts) Show that

$$\mathbf{GEx}^* \subset \mathbf{GBc}.$$

**Exercise 4** (4pts) Show the following three statements.

(a)  $\tau(\mathbf{Cons})\mathbf{GBc} = \mathbf{GBc}.$

(b)  $\tau(\mathbf{Cons})\mathbf{GFin} = \mathbf{GFin}.$

(c)  $\mathbf{ItBc} = \mathbf{GBc}.$

**Exercise 5** (4pts) Show one of the following two statements; showing both gives extra credit (4pts).

(a)  $\mathbf{ItEx} \not\subseteq \mathbf{GConfEx}.$

(b)  $\mathbf{GConfEx} \not\subseteq \mathbf{ItEx}.$