



Computer Architecture II - WS 08/09  
Exercise Sheet 9 (due: 14.01.09)

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**Exercise 1: (Cycles) (6 Points)**

Let  $\tau_r > \tau_s$  and  $k \in [0 : 300]$  for  $\delta = 0.3\%$ . Show the following two statements:

1.  $cy(i + 1) \in cy(i) + [0 : 2]$
2.  $cy(i + 1) \neq cy(i) + 1 \Rightarrow cy(i + 1 + k) = cy(i + 1) + k$

Note that the proof is analogous to the case  $\tau_r \leq \tau_s$ , which has been treated in the lecture.

**Exercise 2: (Upper Bound) (4 Points)**

We assumed that  $k \in [0 : 300]$  for  $\delta = 0.3\%$ . Derive the upper bound for  $k$  such that two statements from **Exercise 1** still hold.