

Homework #3

Due: May 10, 2013

Points: 100

Questions

1. (*25 points*) Prove Theorem 6–1 for the strict integrity policy of Biba’s model.
(*text*, problem 6.1)
2. (*15 points*) In the Clark-Wilson model, must the TPs be executed serially, or can they be executed in parallel? If the former, why; if the latter, what constraints (if any) must be placed on their execution.
(*text*, problem 6.8)
3. (*25 points*) Show that the Clinical Information System Security model’s principles implement the Clark-Wilson enforcement and certification rules.
(*text*, problem 7.3, modified)
4. (*35 points*) Suppose the composite machine *catdog* (see Section 8.4.1) emits the same value from the left and the right. Show that it has received an even number of inputs from the left.
(*text*, problem 8.7, modified).

Extra Credit

1. (*10 points*) Why must sanitized objects be in a single company dataset in their own conflict of interest class, and not in the company dataset corresponding to the institution producing the sanitized object?