

Rod Canfield
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Homework #1

None required for turn in yet; just to secure your understanding.

1. Let $A = \{a^*b^*c^*\}$. Identify the equivalence classes of \sim_A .
2. Same question for $A = \{a^n b^n c^n : n \geq 0\}$.
3. A question on Boolean functions. Suppose f is a Boolean function of n variables which is implemented by a circuit containing only AND's and OR's. (no NOT's) Let $b = b_1 b_2 \cdots b_n$ be an input, and let c be obtained from b by changing one zero to a one. Show that

$$f(b) \leq f(c).$$