Homework 14

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a

b

For every boolean function f can be computed by a Boolean circuit of size S iff f can be computed by a straight-line program with S lines.
First, show that f computed by circuit $|C| = S \rightarrow f$ computed by S-line program:
For each gate in C, there exists an equivalent straight-line program statement with a left-side assignment variable corresponding to the output of the gate and a right side consisting of either a boolean operation performing the gate's operation on input variables corresponding to the input of the gate, or the negation of an input variable corresponding to the input of the gate.

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