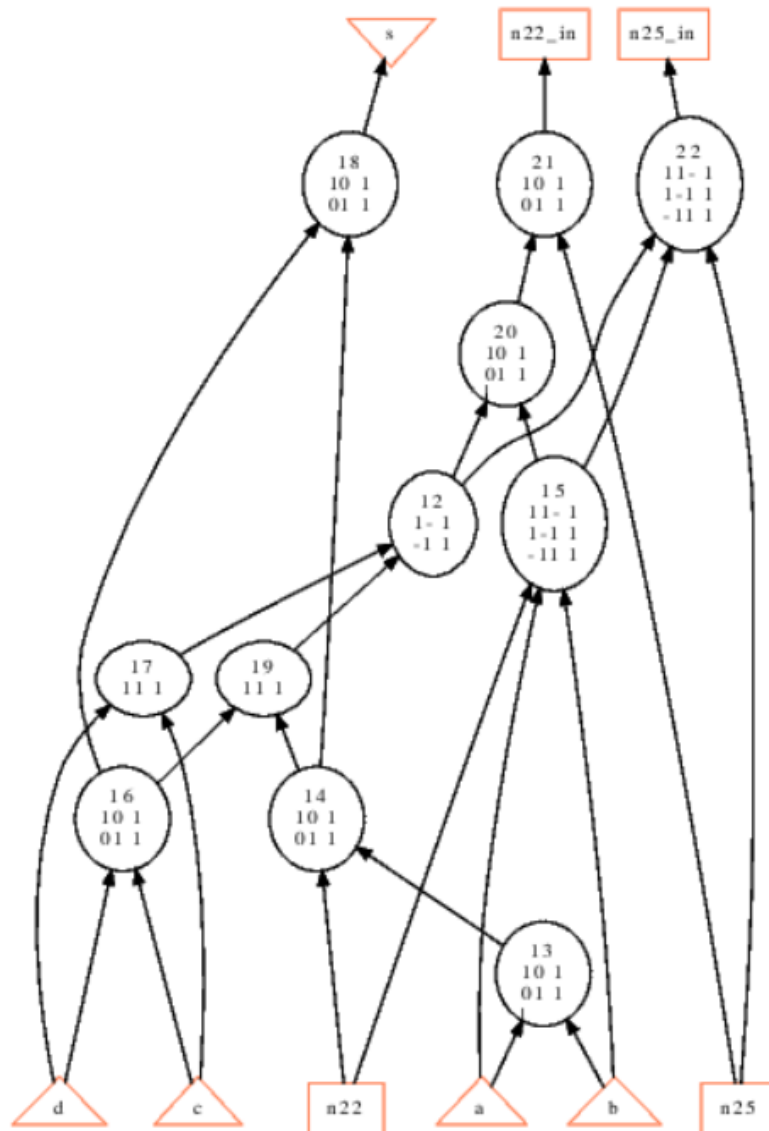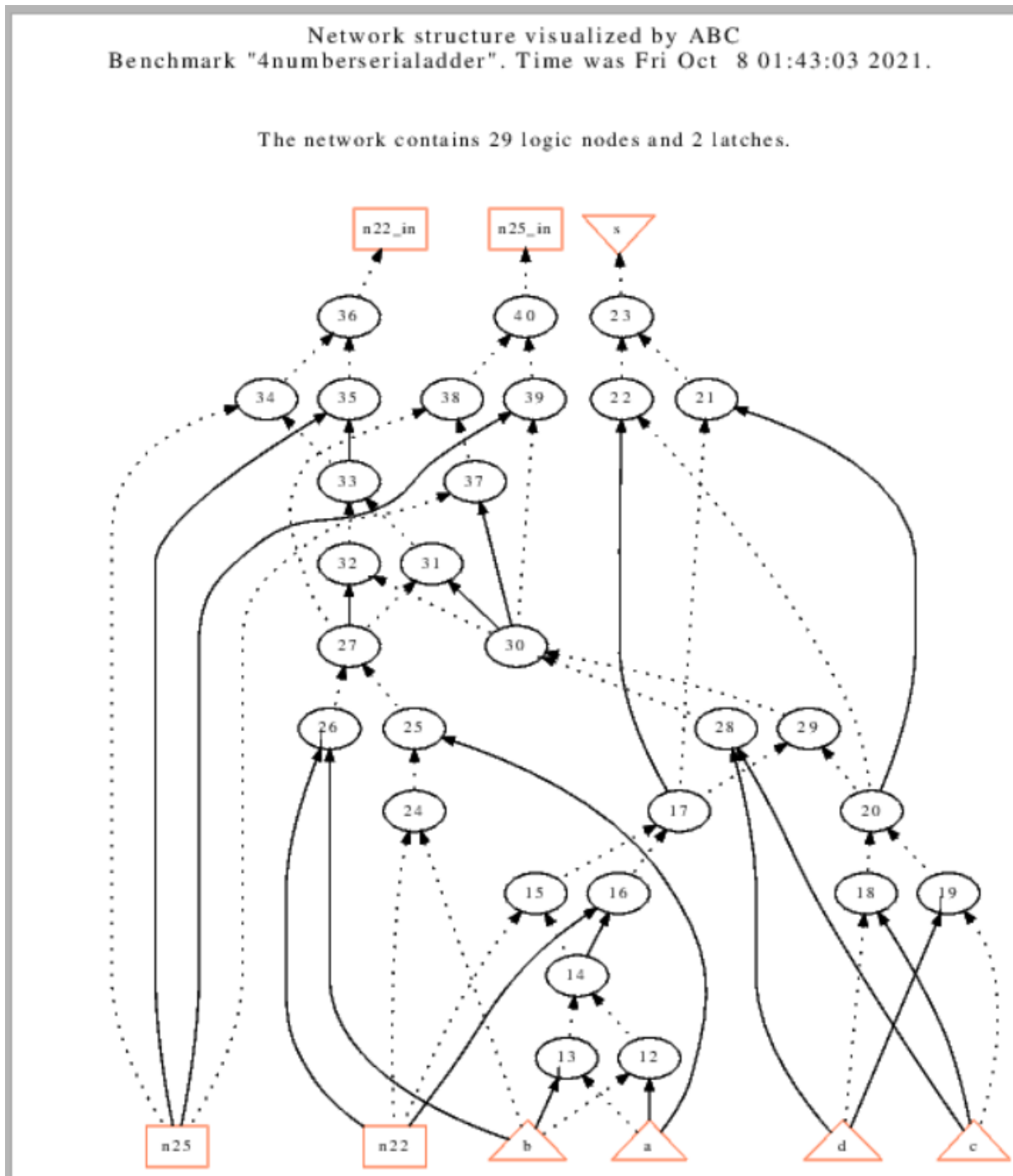**PART I.**
original show

Network structure visualized by ABC
Benchmark "4numberserialadder". Time was Fri Oct 8 01:41:47 2021.
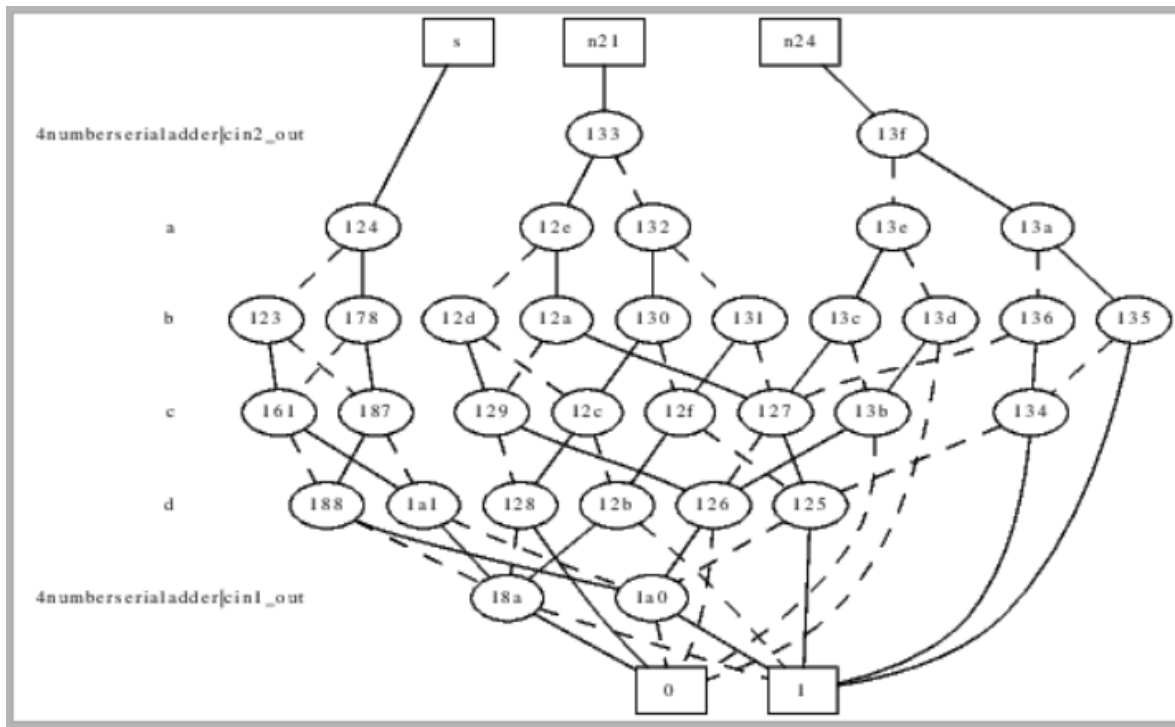
The network contains 11 logic nodes and 2 latches.

show after strash

Network structure visualized by ABC
Benchmark "4numberserialadder". Time was Fri Oct 8 01:43:03 2021.

The network contains 29 logic nodes and 2 latches.

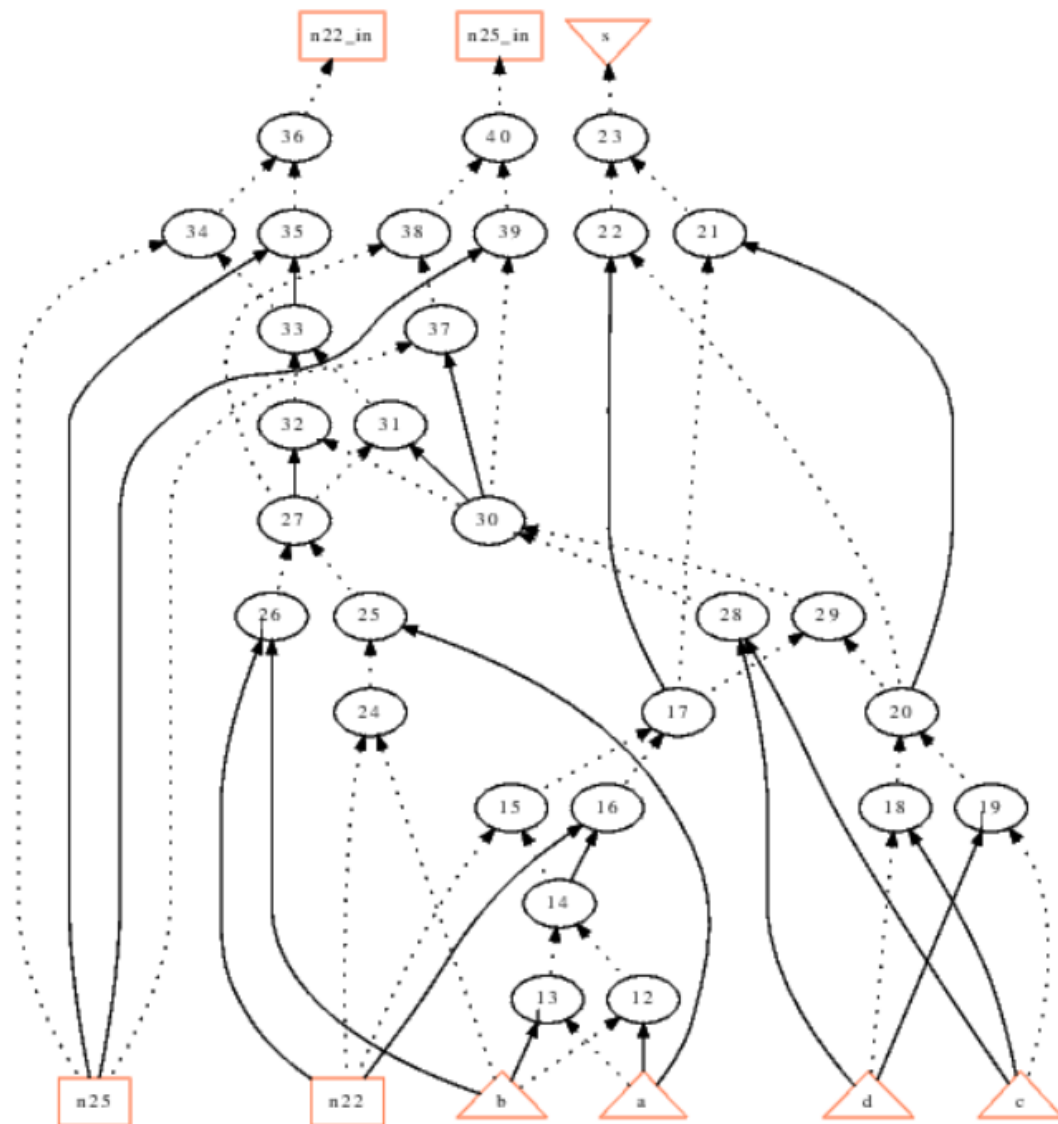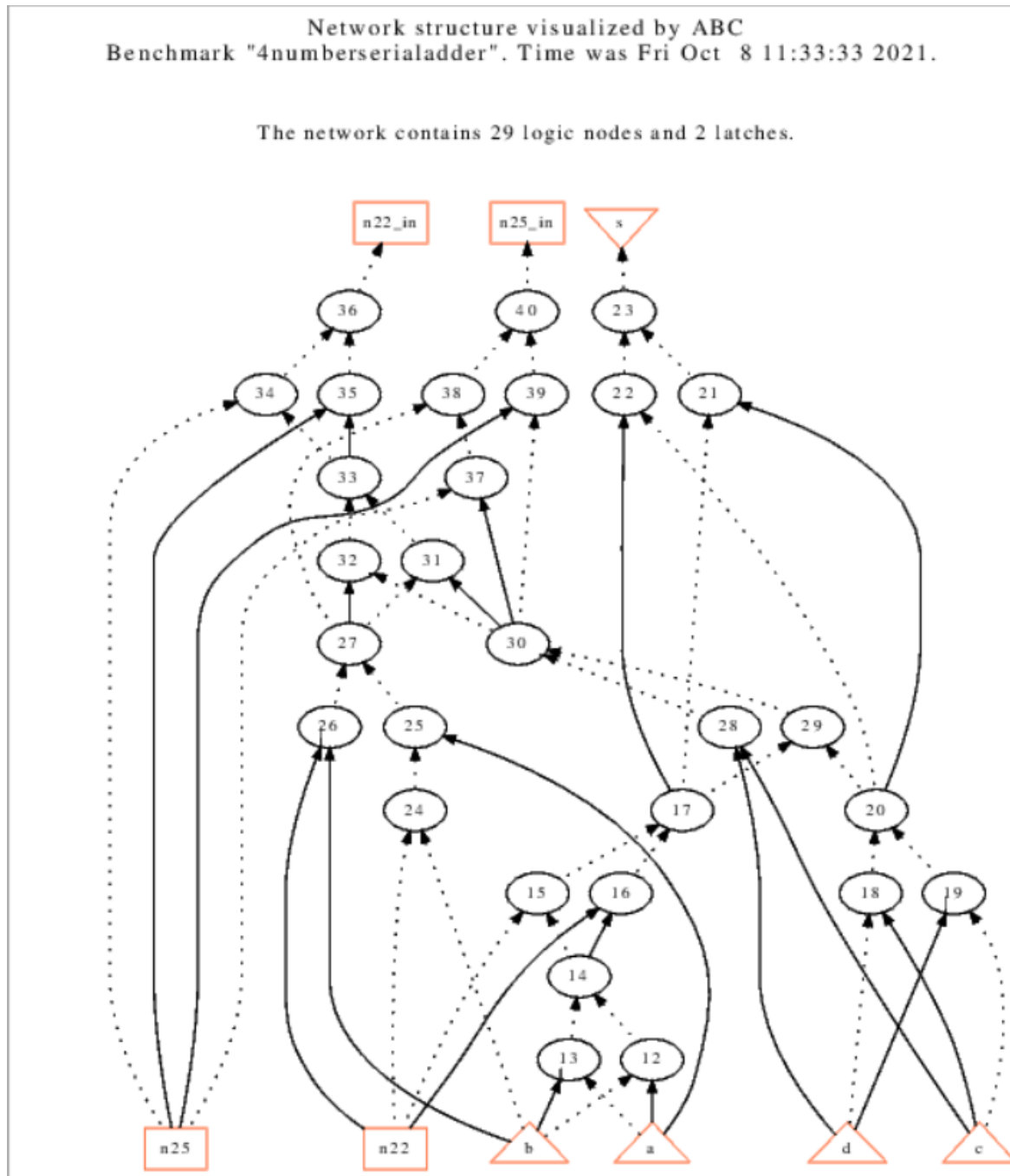show_bdd -g after collapse

PART II.
1.(a)
before hash

Network structure visualized by ABC
Benchmark "4numberserialadder". Time was Fri Oct 8 11:32:24 2021.

The network contains 29 logic nodes and 2 latches.

after hash

Network structure visualized by ABC
Benchmark "4numberserialadder". Time was Fri Oct 8 11:33:33 2021.

The network contains 29 logic nodes and 2 latches.
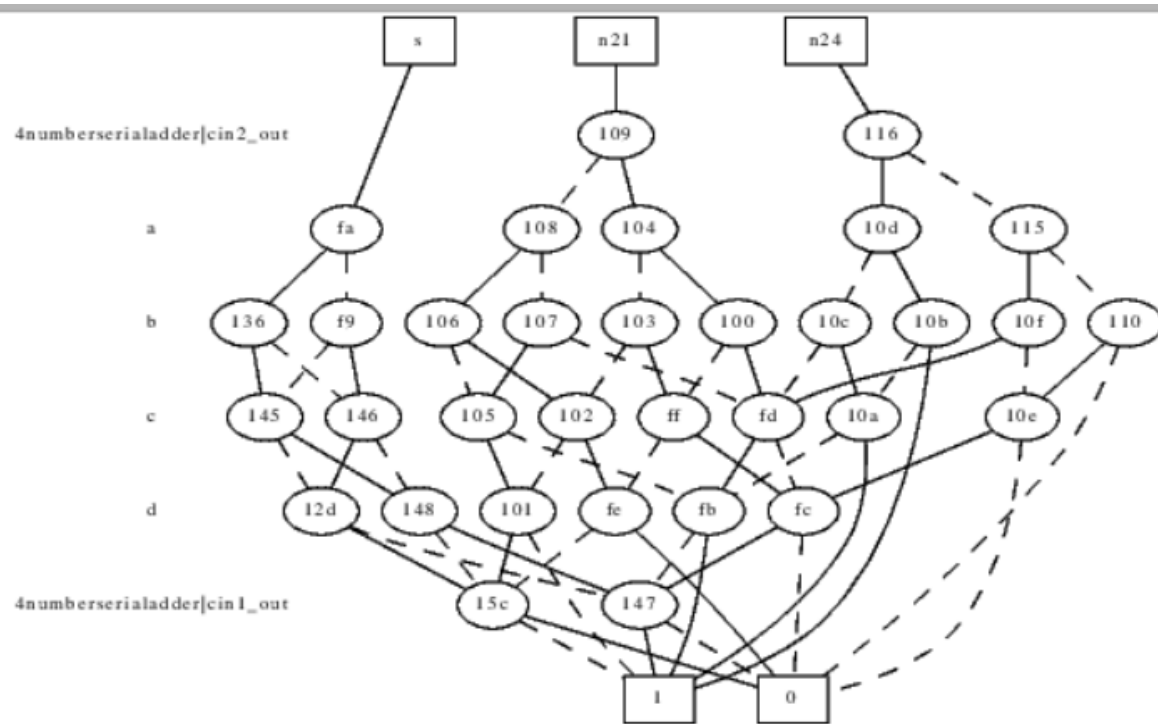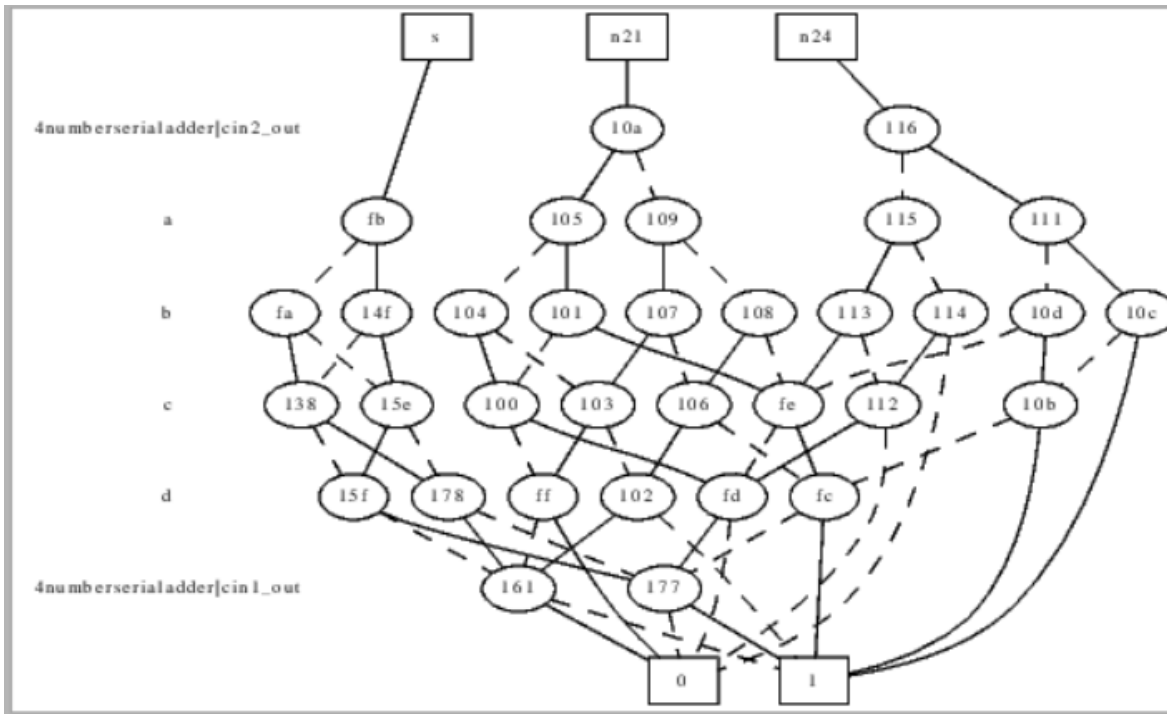
We see that the two AIG diagrams are identical. This implies that the original AIG network is in fact a functionally reduced network. The reason may lie behind the initial configuration of the logic network written in the blif file.

1.(b)
before collapse

after collapse

We can see that the two BDDs are mainly the same. The only slight difference is the allocation of 0&1. I also notice that the node been applied a different way of naming.

2.logic