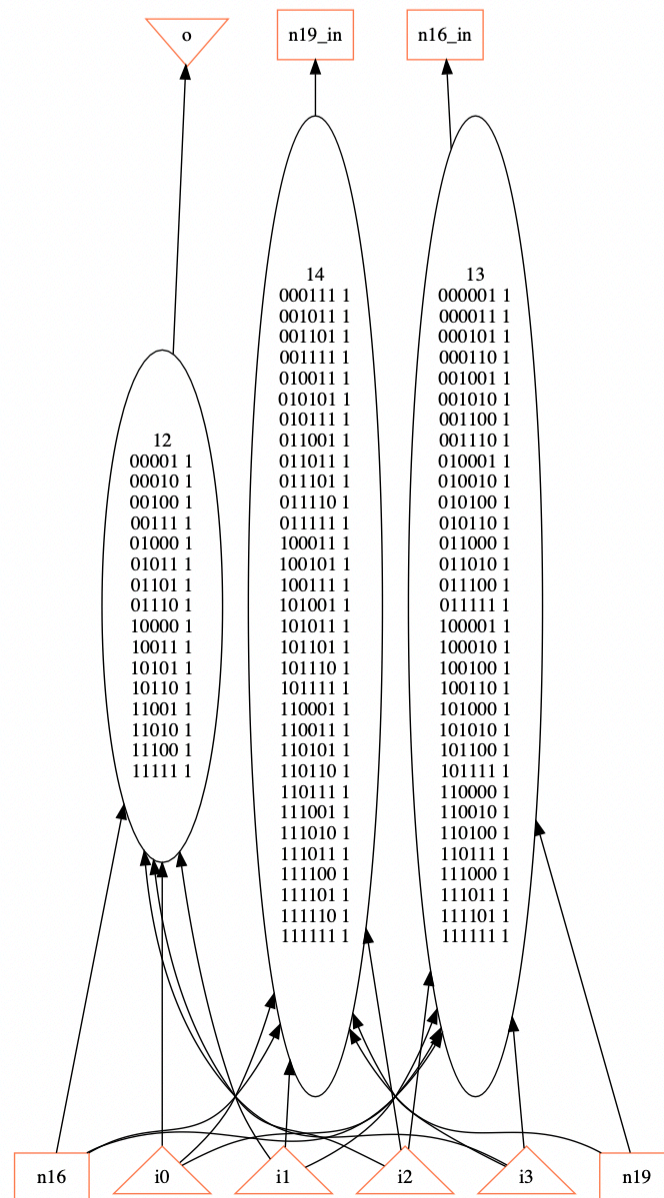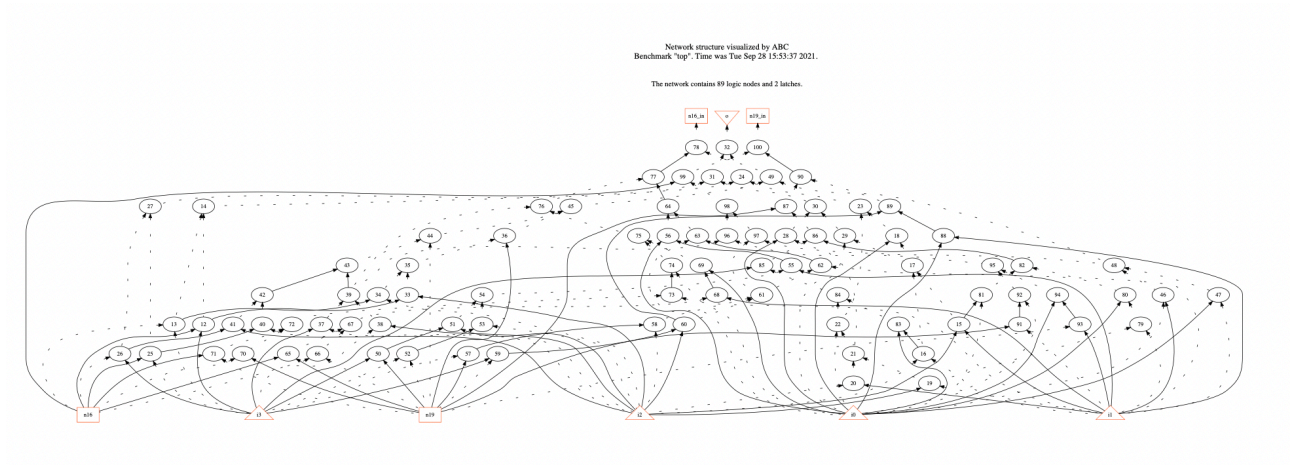# PA1 Report

Part 1

Step 3 show (original logic network)

Network structure visualized by ABC
Benchmark "top". Time was Tue Sep 28 15:52:15 2021.
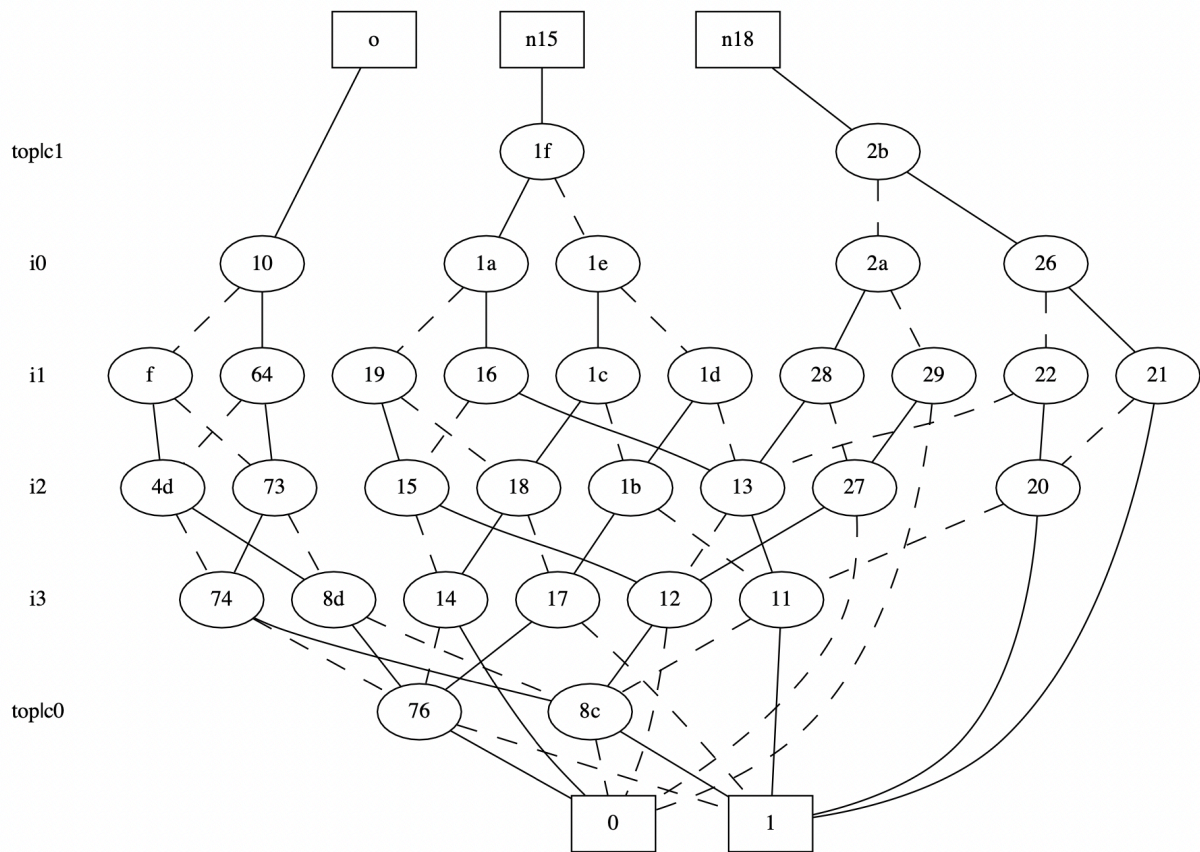
The network contains 3 logic nodes and 2 latches.

Step 5 show (after strash)

Network structure visualized by ABC
Benchmark "top". Time was Tue Sep 28 15:53:37 2021.

The network contains 89 logic nodes and 2 latches.
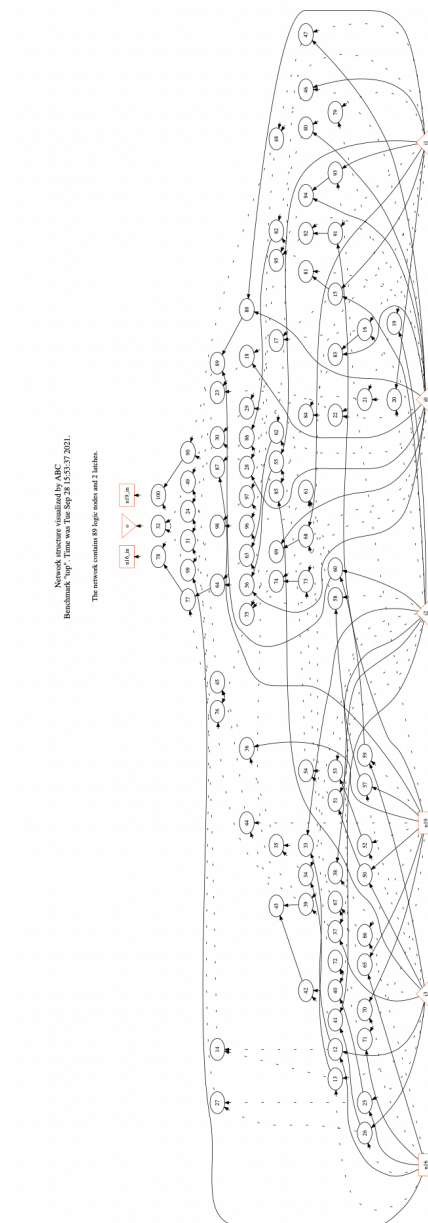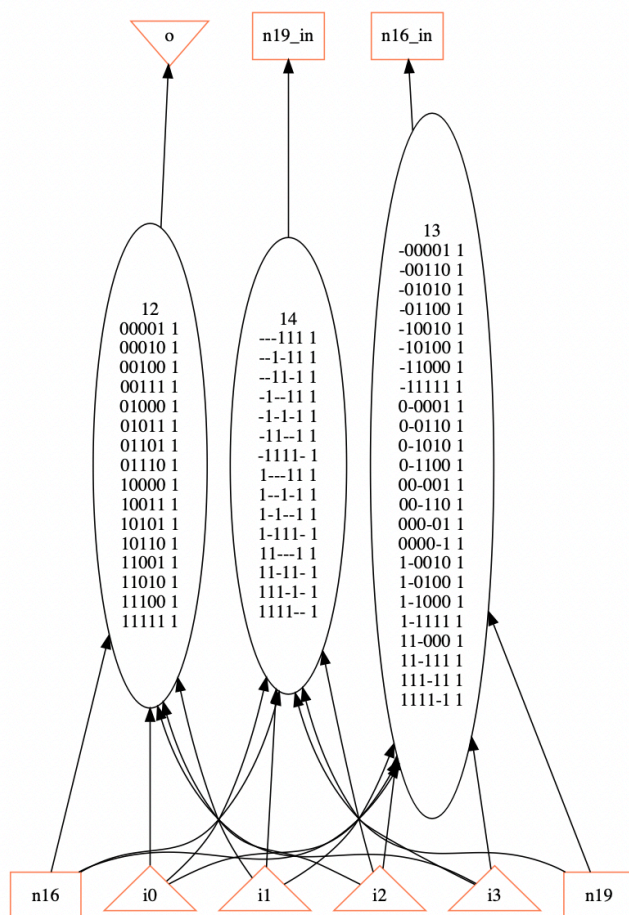
Step 7 show (after collapse)

Part 2

(a)

1. Logic network in AIG (by command aig) vs. Structurally hashed AIG (by command strash)

The logic network in AIG is essentially a logic network. It still preserves the nodes in the original logic network, as we can see in the picture left. Different from the original network, the functionality of each node is represented by AIG.

The structurally hashed AIG changes the original logic network to an AIG network, every nodes in the structurally hashed AIG is an and gate with two fanins(except for the PI/PO/Const1 nodes), as we can see in the right picture.

2. logic network in BDD (by command add) vs. collapsed BDD (by command collapse)

   Similar to the previous question, The logic network in BDD still preserves the nodes in the original logic network, and the functionality of each node is represented by BDD.
   The collapsed BDD changes the original logic network to a global BDD.

(b)

abc 01> logic