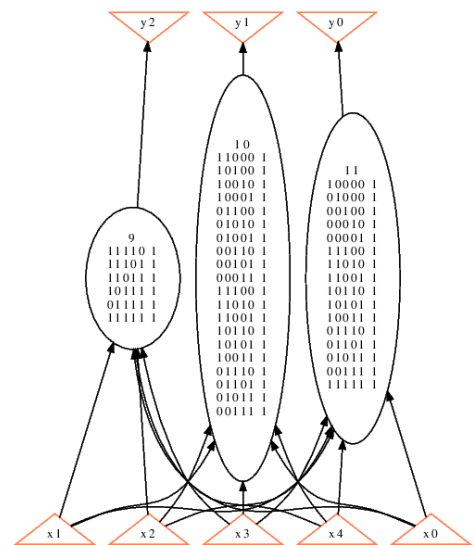B10901158

Problem 2

(b) 1~3

Network structure visualized by ABC
Benchmark "compressor". Time was Sun Sep 22 02:38:41 2024.

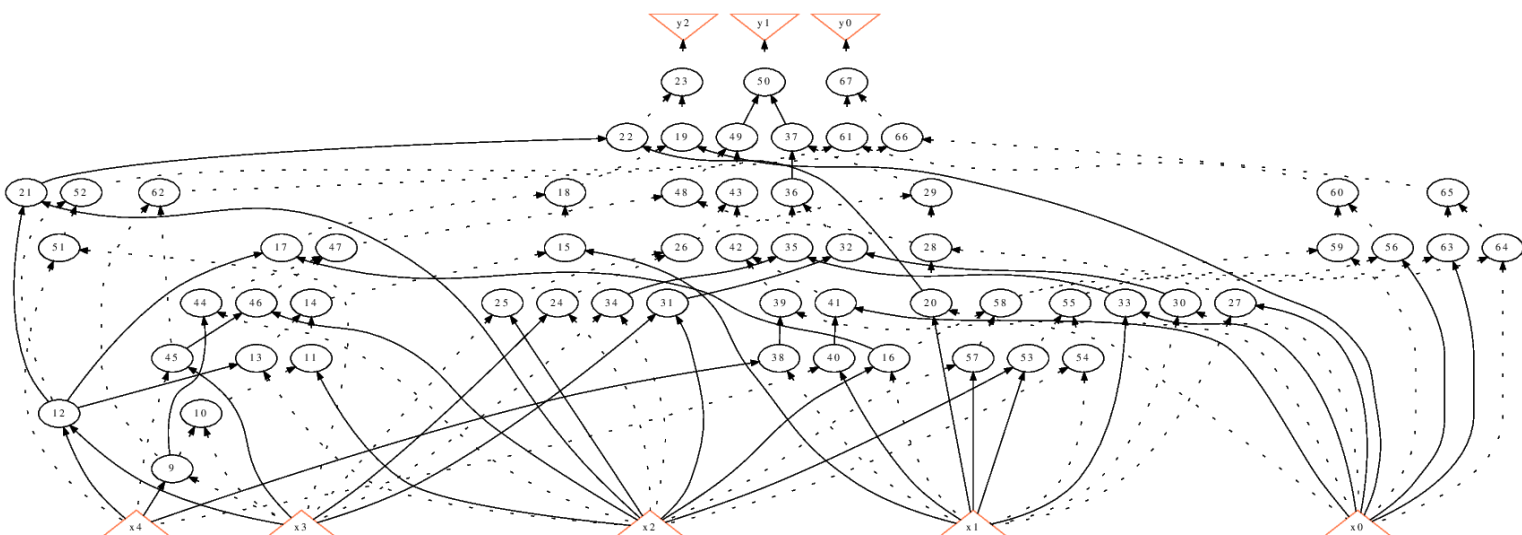The network contains 3 logic nodes and 0 latches.


```
ken@DESKTOP-V73TBU3:~/project/eda_project/abc-master/abc-master$ ./abc
UC Berkeley, ABC 1.01 (compiled Jun 10 2023 11:06:54)
abc 01> read ../comp.blif
abc 02> print_stats
compressor                     : i/o =    5/    3  lat =    0  nd =    3  edge =    15  cube =    42  lev = 1
abc 02> show
abc 02> Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-140-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-efont-biwidth-medium-r-normal--16-*-*-*-*-*-iso10646-1,-gnu-unifont-medium-r-normal--16-*-*-*-*-*-iso10646-1,-adobe-helvetic
a-medium-r-normal--14-*-*-*-*-*-*-*,-jis-fixed-medium-r-*--16-*-*-*-*-*-jisx0208.1983-0,-*-medium-r-*--16-*-*-*-*-*-*,*" to type FontSet
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-100-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Bold-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct
```

(b) 4~5

```
ken@DESKTOP-V73TBU3:~/project/eda_project/abc-master/abc-master$ ./abc
UC Berkeley, ABC 1.01 (compiled Jun 10 2023 11:06:54)
abc 01> read ../comp.blif
abc 02> strash
abc 03> show
abc 03> Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-140-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-efont-biwidth-medium-r-normal--16-*-*-*-*-*-iso10646-1,-gnu-unifont-medium-r-normal--16-*-*-*-*-*-iso10646-1,-adobe-helvetic
a-medium-r-normal--14-*-*-*-*-*-*-*,-jis-fixed-medium-r-*--16-*-*-*-*-*-jisx0208.1983-0,-*-medium-r-*--16-*-*-*-*-*-*,*" to type FontSet
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-100-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Bold-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct
```
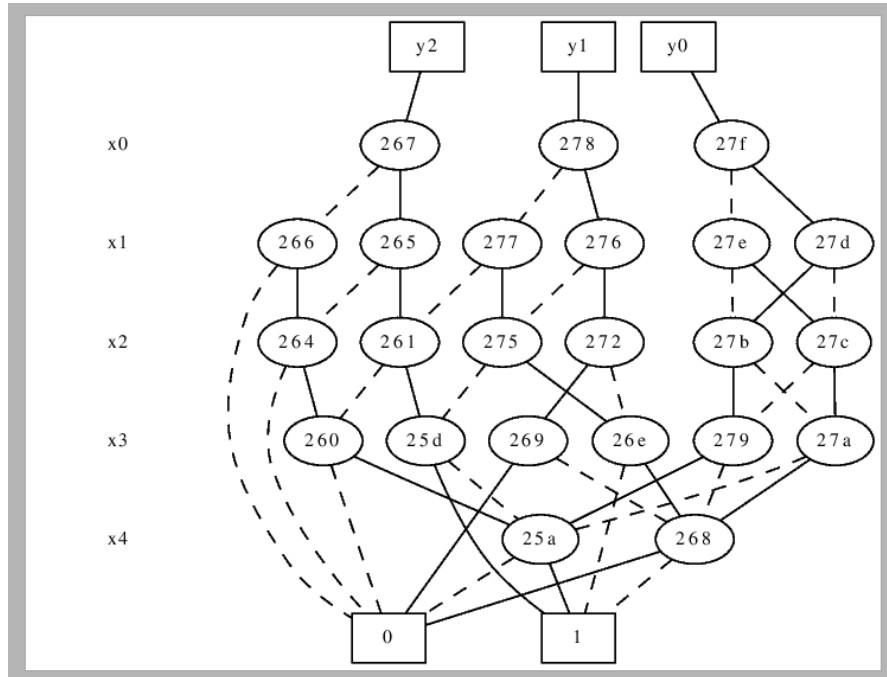
Network structure visualized by ABC
Benchmark "compressor". Time was Sun Sep 22 02:42:20 2024.

The network contains 59 logic nodes and 0 latches.

(b) 6~7

ken@DESKTOP-V73TBU3:~/project/eda_project/abc-master/abc-master$ ./abc
UC Berkeley, ABC 1.01 (compiled Jun 10 2023 11:06:54)
abc 01> read ../comp.blif
abc 02> collapse
abc 03> show_bdd -g
abc 03> Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-140-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-efont-biwidth-medium-r-normal--16-*-*-*-*-iso10646-1,-gnu-unifont-medium-r-normal--16-*-*-*-*-iso10646-1,-adobe-helvetic
a-medium-r-normal--14-*-*-*-*-*-*,-jis-fixed-medium-r-*--16-*-*-*-*-jisx0208.1983-0,-*-medium-r-*--16-*-*-*-*-*,*" to type FontSet
Warning: Missing charsets in String to FontSet conversion
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Medium-R-Normal--*-100-*-*-P-*-ISO8859-1" to type FontStruct
Warning: Cannot convert string "-*-Helvetica-Bold-R-Normal--*-120-*-*-P-*-ISO8859-1" to type FontStruct

Problem 3

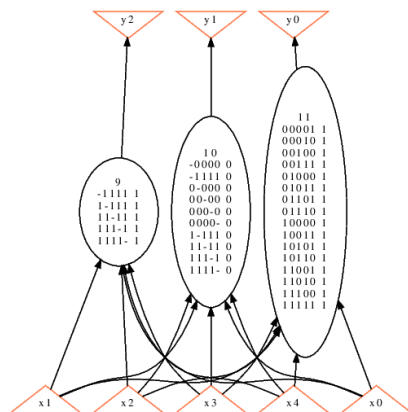(a) 1.

```
abc 01> read ../comp.blif
abc 02> print_stats
compressor                  : i/o =    5/    3  lat =    0  nd =    3  edge =    15  cube =    42  lev = 1
abc 02> aig
abc 02> print_stats
compressor                  : i/o =    5/    3  lat =    0  nd =    3  edge =    15  aig =    65  lev = 1
abc 02> strash
abc 03> print_stats
compressor                  : i/o =    5/    3  lat =    0  and =    59  lev =  8
```

logic network in AIG (below)

Network structure visualized by ABC
Benchmark "compressor". Time was Sun Sep 22 03:04:15 2024.

The network contains 3 logic nodes and 0 latches.

structurally hashed AIG is already showed in problem2

by print_stats and show command, I find the aig command only change

each node to AIG separately (# of nodes is not changed after aig

command), and the strash command change the whole network to AIG
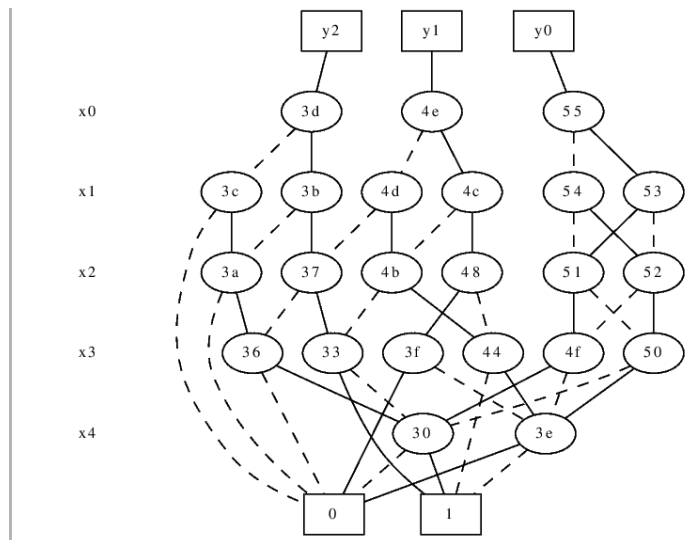
(the node is disappeared)

(a) 2.

abc 01> read ../comp.blif
abc 02> print_stats
compressor   : i/o =   5/   3 lat =   0 nd =   3 edge =   15 cube =   42 lev = 1
abc 02> bdd
abc 02> print_stats
compressor   : i/o =   5/   3 lat =   0 nd =   3 edge =   15 bdd =   21 lev = 1
abc 02> collapse
abc 03> print_stats
compressor   : i/o =   5/   3 lat =   0 nd =   3 edge =   15 bdd =   21 lev = 1
abc 03>

logic network in BDD(below)

collapsed BDD is already showed in problem2

I think bdd command change each node to BDD and collapse command

change each PO to BDD just like the aig command and strash command,

but the original network only contains 3 nodes and each node is

corresponding to one PO (change each node to BDD is the same to

change each PO to BDD), so the results and graphs of two command (bdd

and collapse) is the same.

3 (b)

```
abc 01> read ../comp.blif
abc 02> strash
abc 03> collapse
abc 04> sop
```