2.40

a. +1.0*2^1 = 2

b. -(1+1/16)*2^4 = -17

c. +inf

d. -(1+1/2+1/16)*2^1 = -3.125

2.43

a. Hello!

b. hELLO!

c. Computers!

d. LC-2

3.6

A	B	C	D	Z
0	0	1	1	0
1	0	0	1	0
0	1	1	0	0
1	1	0	0	1

$$Z = A \times B$$

3.20

1 output line.

4 select lines.

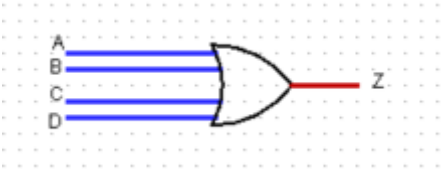
3.23

a.

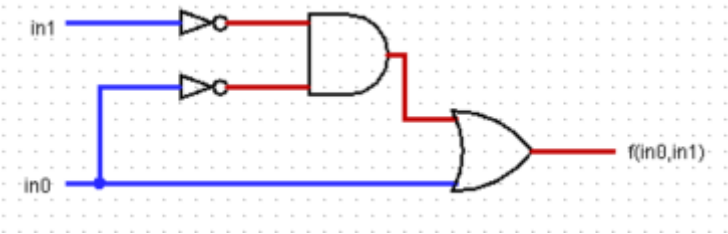
A	B	C	D	Z
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

The truth table has 16 rows.

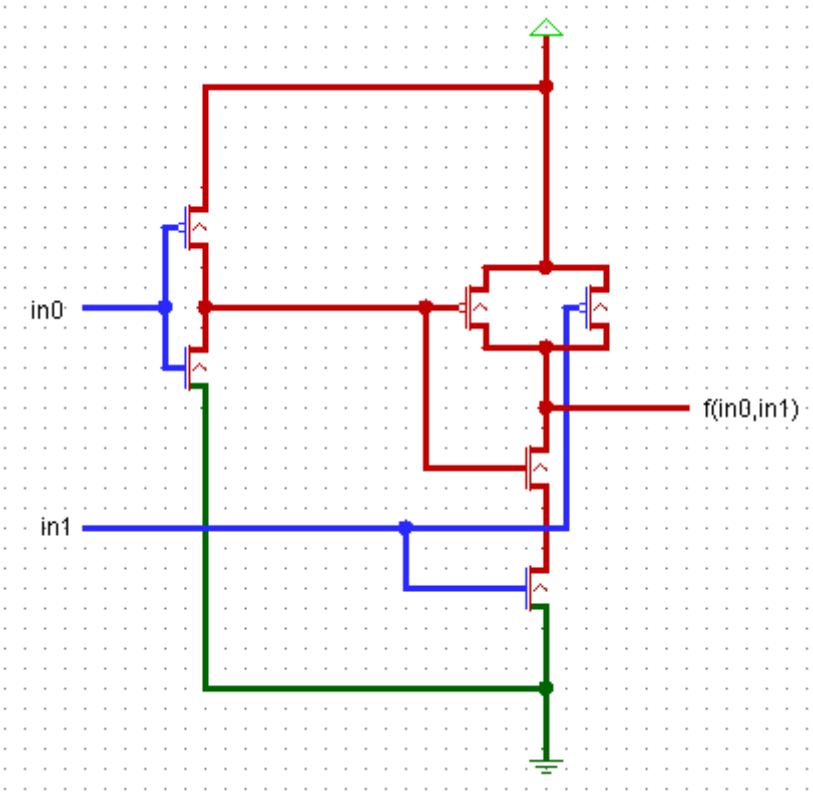
b.



3.26



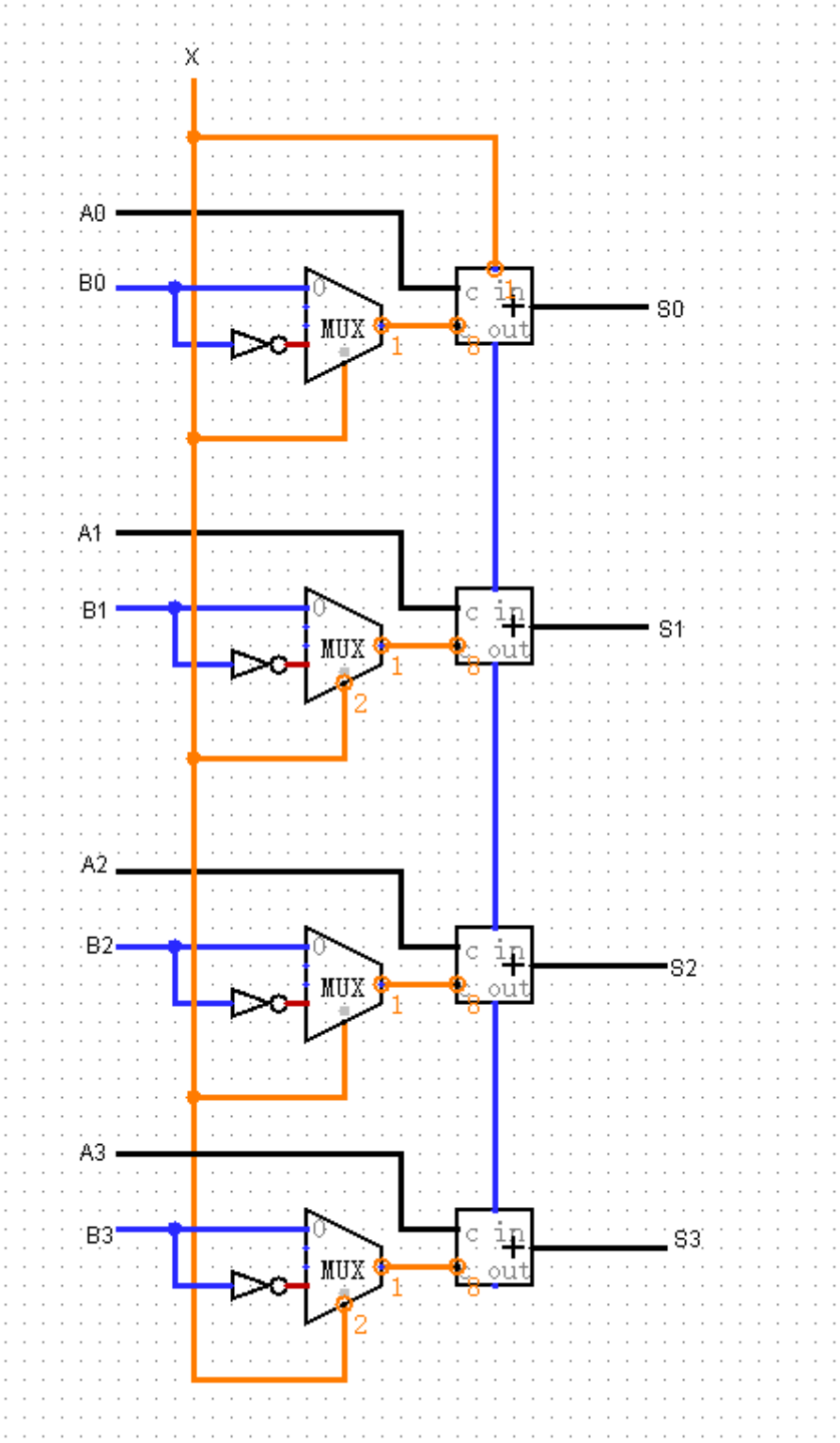
$$f(in_0, in_1) = \overline{in_0 in_1} + in_0 = \overline{\overline{in_0} in_1}$$



3.30

a. if X=0, S = A+B, if X=1, S=A+C.

b.



if X = 0, S = A + B

if X = 1, S = A + NOT(B) + 1 = A - B

3.36

a.

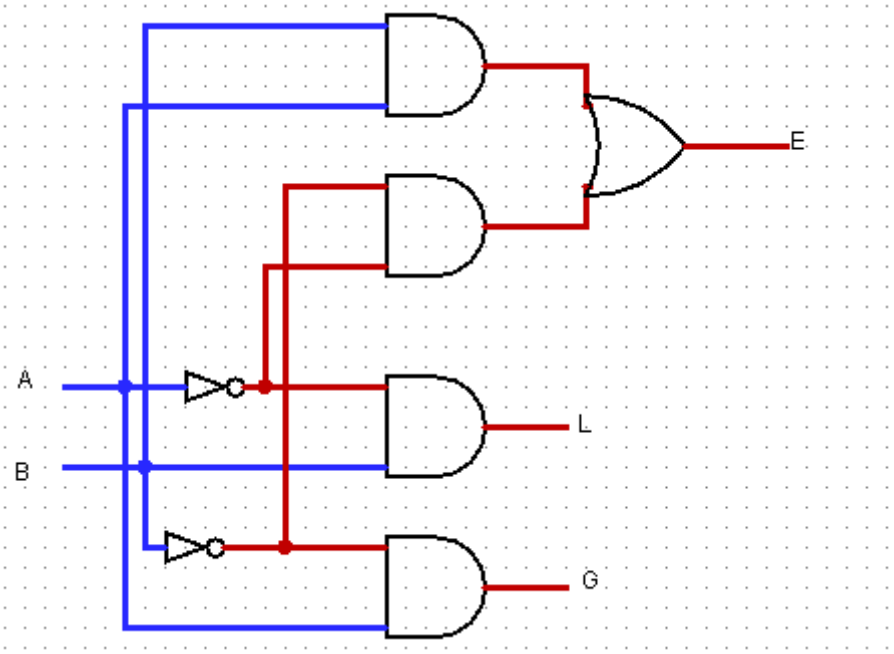
A	B	G	E	L
0	0	0	1	0
0	1	0	0	1
1	0	1	0	0
1	1	0	1	0

b.

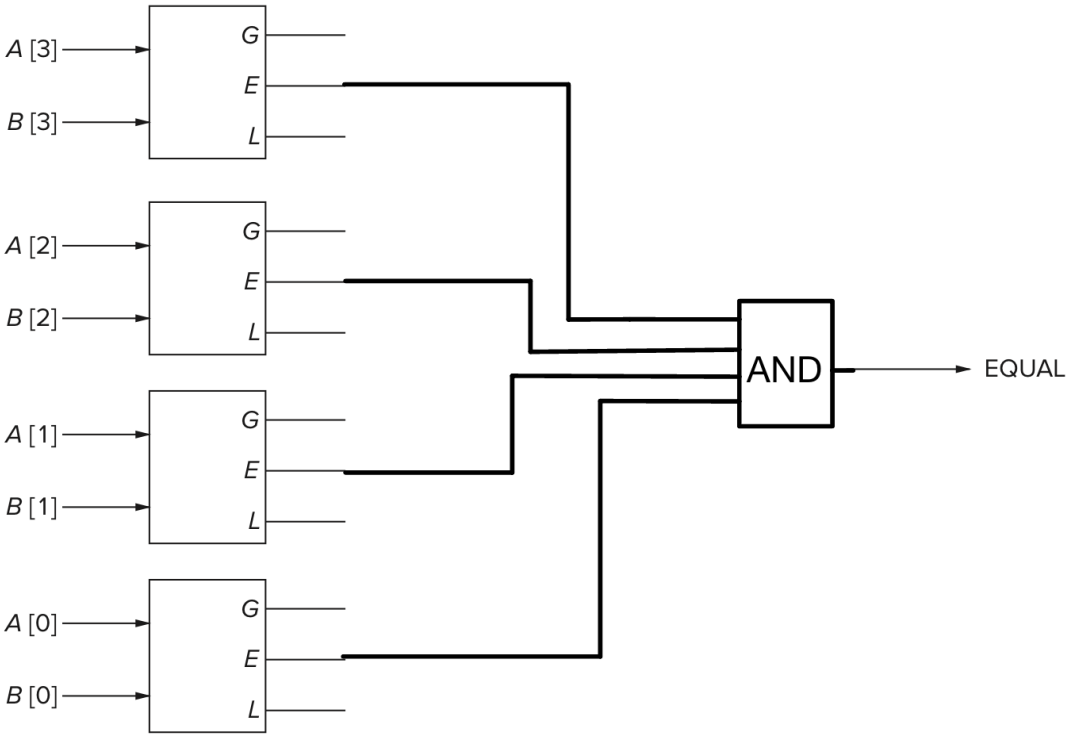
$$G = A\overline{B}$$

$$E = \overline{AB} + AB$$

$$L = B\overline{A}$$



c.


A [3]
B [3]
G
E
L
A [2]
B [2]
G
E
L
A [1]
B [1]
G
E
L
A [0]
B [0]
G
E
L
AND
EQUAL