Introduction to Computing System

Homework 2 Answer

Homework

3.4

wire

wire

no wire no wire

A	B	C
0	1	0
1	0	0
1	1	0

3.6

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

Z = A AND B

3.14

1   4

3.16
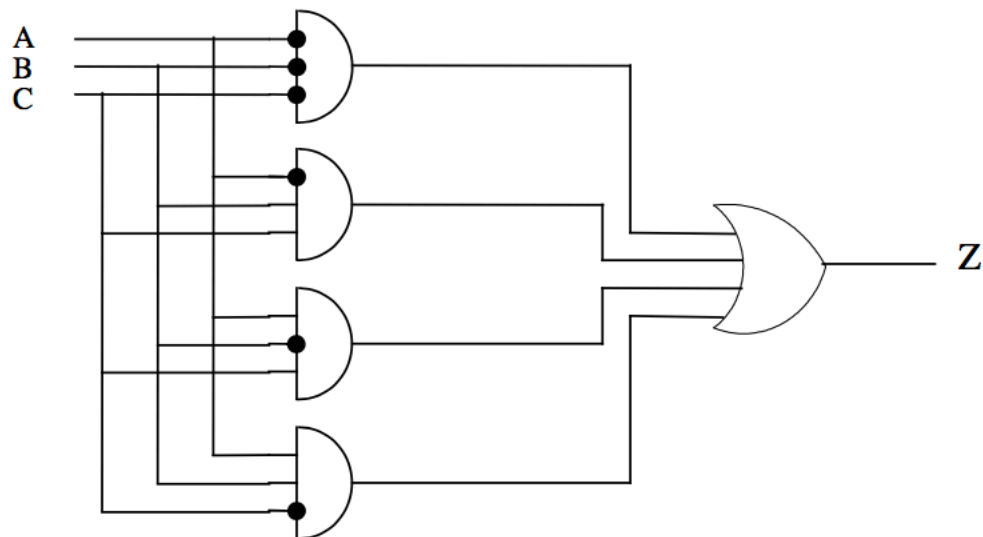
3.24
a X = 0, S = A + B; X = 1, S = A + C
b Figure 3-39 with the following two modifications:
    (1) C = NOT(B) (2) Carry-in = X

3.25
a. 3
b. 3
c. 3 * 4 = 12
d. 3 * 32 = 96

3.28
a. 3
b. 3
c. 9
d. 4
e.

A[1]	A[0]	B[1]	B[0]	Y
0	0	0	0	0000
0	0	0	1	0000
0	0	1	0	0000
0	0	1	1	0000
0	1	0	0	0000
0	1	0	1	0001
0	1	1	0	0010
0	1	1	1	0011
1	0	0	0	0000
1	0	0	1	0010
1	0	1	0	0100

1	0	1	1	0110
1	1	0	0	0000
1	1	0	1	0011
1	1	1	0	0110
1	1	1	1	1001

f.

It is easy and omitted.

3.29
Nope.

3.33
a. 11 0
b. 6   3
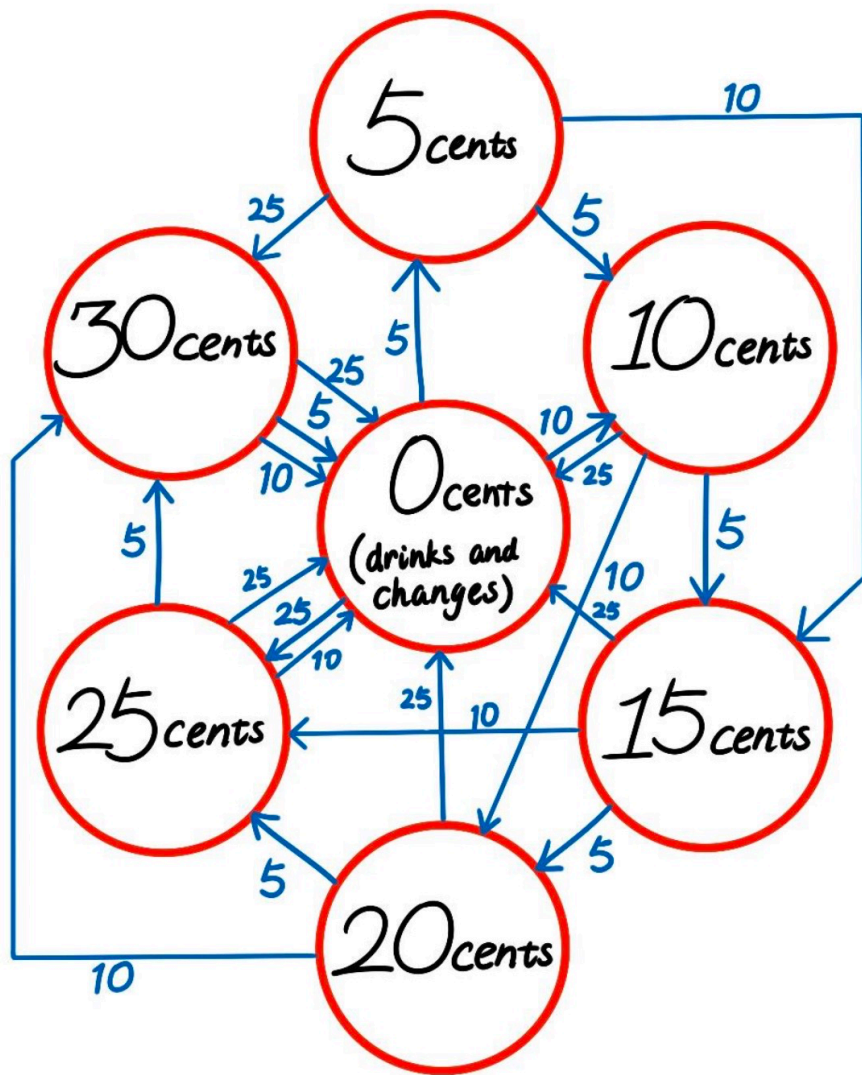c. $2^6 - 6 = 4$

3.34
a. 4
b. 4
c. 0001

3.35
$2^{22} * 3 = 12582912$

3.36
Nope.

3.41

(The graph here is created by Cao Siyu, for it looks better than mine. Thank Cao Siyu!)