

I08Q1

Tuesday, February 26, 2008
12:37 PM

Q1

F ₀	F ₁	EN _A	EN _B	IN _{VA}	Carry in	Fonction
0	0	1	0	1	1	0
0	0	1	0	0	0	0
0	1	1	1	0	1	A+B
0	1	1	1	1	0	A+B
1	0	1	1	1	0	B
1	1	0	1	1	1	-B-1
1	1	1	0	1	0	A

Q2

0000		<u>0000</u> ✓			
0010		0010 ✓	00-0 ✓		0--0
0100		<u>0100</u> ✓	<u>0-00</u> ✓		<u> </u>
0101		0101 ✓	0-10 ✓		01--
0110		0110 ✓	01-0 ✓		
0111		<u>1001</u> ✓	<u>010-</u> ✓		
1001		0111 ✓	01-1 ✓		
1101		1101 ✓	-101 ✗		
1110		1110	-110 ✗		
			011- ✓		
			1-01 ✗		

	0	2	4	5	6	7	9	13	14
	0000	0010	0100	0101	0110	0111	1001	1101	1110
-101				✓				✓	
-110					✓				✓
1-01							✓	✓	
0--0	✓	✓	✓		✓				
01--			✓	✓	✓	✓			

$$f(A, B, C, D) = BC\bar{D} + A\bar{C}D + \bar{A}\bar{D} + \bar{A}B$$

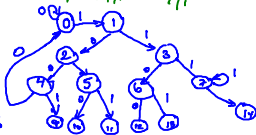
Survival / delete

Q3
pad
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

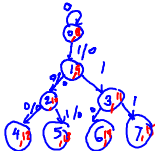
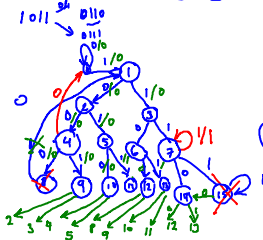
	0	1
0	0/0	1/0
1	2/0	3/0
2	4/0	5/0
3	6/0	7/1
4	8/0	9/0
5	10/0	11/1
6	12/0	13/1
7	14/1	15/1
8	0/0	1/0
9	2/0	3/1
10	4/0	5/1
11	6/1	7/1
12	8/0	9/1
13	10/1	11/1
14	12/1	13/1
15	14/1	15/1

1	2/0
4	2/0
2	4/0
10	4/0
3	6/0
11	6/0
4	8/0
12	8/0
5	10/0
13	10/1
6	12/0
14	12/1
7	14/1

3/0
3/1
5/0
5/1
7/1
7/1
9/0
9/1
11/1
11/1
13/1
13/1
15/1
15/1



$i \rightarrow 2i \bmod 16$
 $\rightarrow 2i+1 \bmod 16$
 011
 1011
 0110
 0111



Q4

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Swi/ask

$$x, z$$

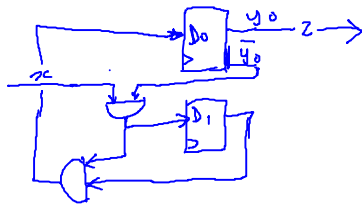
$y_0, 1$	0	1
00	00, 0	01, 0
01	00, 1	11, 0
11	00, 1	00, 1
10	11, 1	11, 1

$$y_0 = y_0 y_1 x$$

$$y_1 = x y_0$$

$$z = y_0 y_1$$

don't care



Q5

```
while b != 0
  if a > b
    a := a - b
  else
    b := b - a
  return a
```

local var: a = 1
b = 2
bucle: si b = 0 a/fin
si a > b allora a bvrui
a ← a - b
allora a bucle
bvrui: a ← a - b
allora a bucle
fin: ...

b = 2
bucle: i load b
ifeq fin
i load a
i load b
isub
iflt bvrui
i load a
i load b
isub
istore b
goto bucle
bvrui: i load b
i load a
isub
istore a
goto bucle
fin: ...

bucle: i load b
ifeq fin
i load a
i load b
isub
dup
iflt bvrui
istore b
goto bucle
bvrui: bipush 0
isub
istore a
goto bucle
fin: ...

Q6

```
m1 RAM ← SP - 1, rd
m2 H ← TOS
m3 H ← H + MDR
m4 MDR ← TOS ← H ← H + MDR, wr
m5 goto main 1
```