1. a) i. $B42A_{16}$ to decimal

$11(16^3) + 4(16^2) + 2(16) + 10$

$45056 + 1024 + 32 + 10$

46122

ii. 6789_{10} into hex

16|6789

16|424 R5

16|26 R8

16|1 R A

0 R 1

$6789_{10} = 1A85_{16}$

iii. 0011 0101 0100 1110_2

3 5 4 E $354E_{16}$.

can group in groups of 4 to create easier hex conversion

iv. 64-bit bit binary number has 16 hex digits.

64/4 = 16

$x + y + C_{in} = C_{out} + z$

b)

x	y	C_{in}	C_{out}	z
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
1	1	0	1	0
0	0	1	0	1
0	1	1	1	0
1	0	1	1	0
1	1	1	1	1

$$xy\overline{C_{in}} + \bar{x}yC_{in} + x\bar{y}C_{in} + xyC_{in}$$

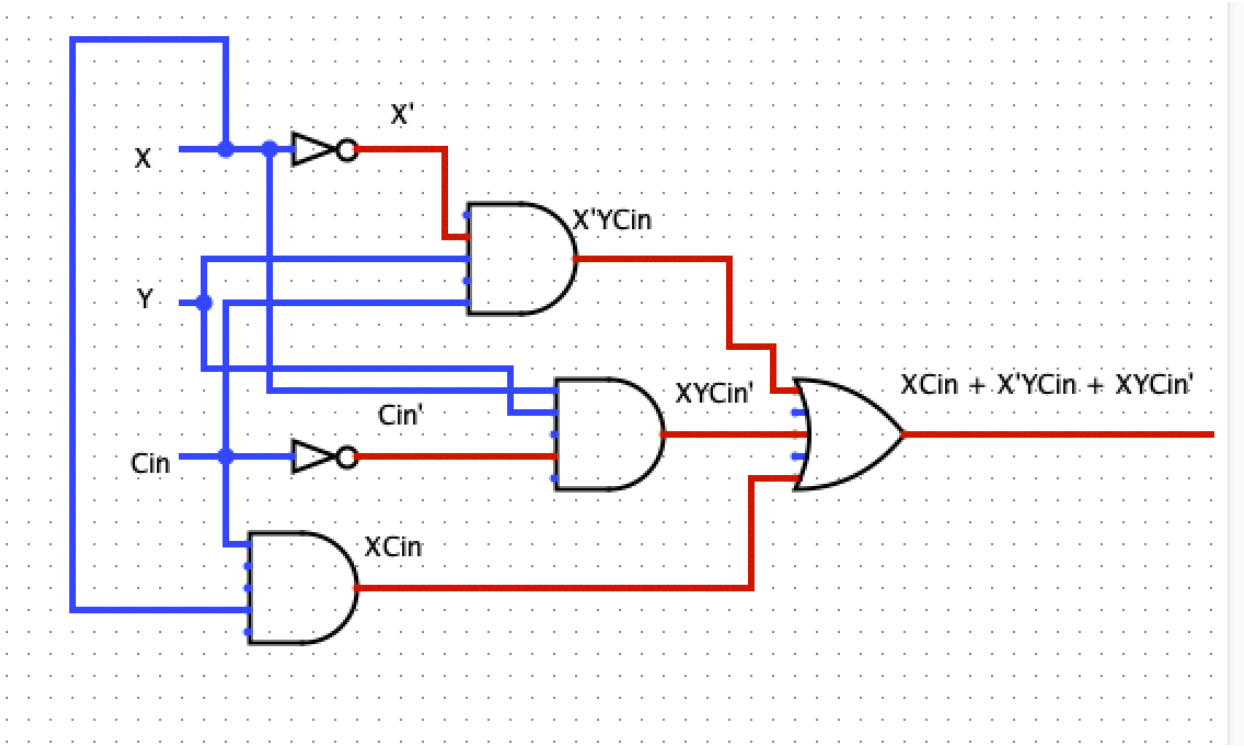
$$xyC_{in} + x\bar{y}C_{in} + \bar{x}yC_{in} + xy\overline{C_{in}}$$

$$xC_{in}y + xC_{in}\bar{y} + \bar{x}yC_{in} + xy\overline{C_{in}}$$

$$xC_{in}(y + \bar{y}) + \bar{x}yC_{in} + xy\overline{C_{in}}$$

$$xC_{in}(1) + \bar{x}yC_{in} + xy\overline{C_{in}}$$

$$xC_{in} + \bar{x}yC_{in} + xy\overline{C_{in}}$$


X
Y
Cin
X'
Cin'
XCin
X'YCin
XYCin'
XCin + X'YCin + XYCin'