

VDD
 5V $\rightarrow$ 1
 GND
 0V $\rightarrow$ 0

① 010
 -8

in C language
0b1010 $\rightarrow$ binary number
 0xFF $\rightarrow$ Hex number

$\downarrow$
 0b1111 1111
 0xFE
1111 1110

2's complement

0101 5
 $\downarrow \downarrow \downarrow \downarrow$
 1010
 $\begin{array}{r} + \\ \hline \end{array}$
 ① 011
 $-8 + 0 + 2 + 1 = -5$

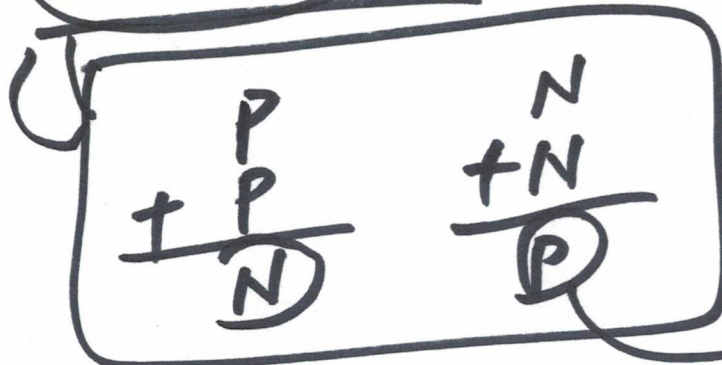
Decimal	Hex
0	0
...	...
9	9
10	A
...	...
15	F

①

Binary	hex	decimal	representation
0b1010	0xA	10	unsigned
0b1010	0xA	-6	signed
0b1100	0xC	-4	signed

1...111 -1
~~1...111~~
 1...1110 -2

overflow $\neq$ carryout



$\begin{array}{r} 111 \\ + 100 \\ \hline 1011 \end{array}$

 -1
 -4
 -5
 adopt it

$\begin{array}{r} 111 \\ + 1011 \\ \hline 1010 \end{array}$

 N 1
 P 3
 2

(2)

$\begin{array}{r} 011 \\ + 011 \\ \hline 0110 \end{array}$

 P 3
 P 3
 N 6
 carryout adopted

& bit-wise AND & $\begin{array}{r} 1101 \\ 0001 \\ \hline 0001 \end{array}$
& & Logic
event based AND

| bit-wise OR

|| Logic
event OR

~ bit-wise NOT

!= logic NOT

(3)