Tuesday Reading Assessment: Chapter 2-1 through 2-7

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September 2, 2021

1 Binary and Other Number Systems

1. What is the *weight* of the digit 6 in each of the following numbers? (a) 1386 (b) 54,692 (c) 671,920

2. Convert each number to scientific notation: (a) 1400 (b) 0.000071 (c) 130,000,000 (d) 1/3

3. What is the largest number you could represent with three *decimal* digits?
4. What is the largest number you could represent with three *binary* digits?
5. Decode the following into decimal: (a) 1111 (b) 11110000 (c) 1111 0000 0000

2 Signed Numbers

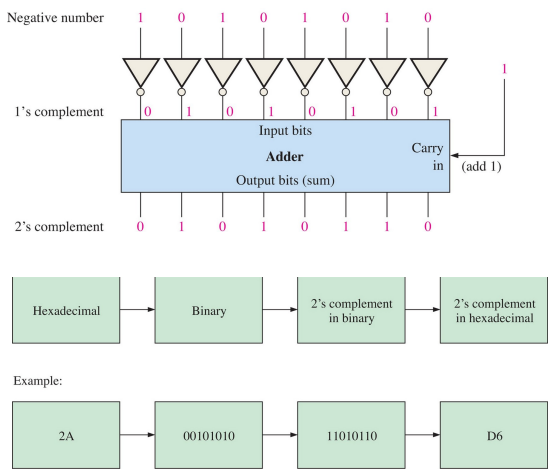

FIGURE 2-4 Getting the 2's complement of a hexadecimal number, Method 1.

TABLE 2-3

Decimal	Binary	Hexadecimal
0	0000	0
1	0001	1
2	0010	2
3	0011	3
4	0100	4
5	0101	5
6	0110	6
7	0111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F

Figure 1: (Top left) a circuit used in binary conversion. (Top right) Decimal, binary, and hexadecimal digits. (Bottom left) A procedure for hexadecimal conversion.

1. What is the purpose of the circuit in the top left of Fig. 1?
2. Examining Fig. 1 (top left), what is 256 in binary and hexadecimal?
3. What is -127 in binary and hexadecimal?