Binary Numbers

The Base -10 Expansion.   2543

$$= 2 \times 10^3 + 5 \times 10^2 + 4 \times 10 + 3$$

Binary Expansion $(1001)_2 = 1 \times 2^3 + 0 + 0 + 1 = 9$

$$(11)_2 = 3$$

$$(110)_2 = 6$$

$$(1001)_2 = 9$$

0	0	1	= 1
0	1	0	= 2
0	1	1	= 3
1	0	0	= 4
1	0	1	= 5
1	1	0	= 6
1	1	1	= 7

1	0	0	0	= 8
1	0	0	1	= 9
1	0	1	0	= 10 A
1	0	1	1	= 11 B
1	1	0	0	= 12 C
1	1	1	1	= 15 f
1	1	0	1	= 13 D
1	1	1	0	= 14 E

Adding in binary system

$$6$$
$$+\ 3$$
$$\neq\ 9$$

$$1$$
$$1\ 1\ 0$$
$$+\ 0\ 1\ 1$$
$$=\ 1\ 0\ 0\ 1$$

EXER 5-4

$$T(n) = 4T\left(\frac{n}{2}\right) + n^2 \log n \ ?$$

$$R = \log_2 4 = 2$$

$$f(n) = n^2 \log n \neq \Omega\left(n^{2+\varepsilon}\right) \text{ for any } \varepsilon > 0$$