

Hexadecimal – Base 16

Hexadecimal, or Hex, is a number system based on 16 digits. The first ten are the same as our normal digits but for the remaining six digits, it uses the capital letters A to F

Denary digits	Binary Digits	Octal	Hex
0, 1, 2, 3, 4, 5, 6, 7, 8, 9	0, 1	0, 1, 2, 3, 4, 5, 6, 7	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

In both systems you can count things:

Denary	Binary	Octal	Hex
0	0	0	0
1	1	1	1
2	10	2	2
3	11	3	3
4	100	4	4
5	101	5	5
6	110	6	6
7	111	7	7
8	1000	10	8
9	1001	11	9
10	1010	12	A
11	1011	13	B
12	1100	14	C
13	1101	15	D
14	1110	16	E
15	1111	17	F
16	10000	20	10
17	10001	21	11

Denary	Binary	Octal	Hex
18	10010	22	12
19	10011	23	13
20	10100	24	14
21	10101	25	15
22	10110	26	16
23	10111	27	17
24	11000	30	18
25	11001	31	19
26	11010	32	1A
27	11011	33	1B
28	11100	34	1C
29	11101	35	1D
30	11110	36	1E
31	11111	37	1F
32	100000	40	20
33	100001	41	21
34	100010	42	22
35	100011	43	23
etc	etc	etc	

Hex

Number	256's 16^2	16's 16^1	1's 16^0	Denary equivalent
610 ₁₆ OR &610	6	1	0	$(6 \times 256) + (1 \times 16) + (0 \times 1) = 1536 + 16 + 0$ $= 1552_{10}$
&DA3	D	A	3	$(13 \times 256) + (10 \times 16) + (3 \times 1) = 3328 + 160 + 3$ $= 3491_{10}$
	F	A	B	$(15 \times 256) + (10 \times 16) + (11 \times 1) = 3840 + 160 + 11$ $=$
				$= 3905_{10}$