Number Bases

Decimal (base 10) 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

1,000,00	100,000	10,000	1,000	100	10	1
10^6	10^5	10^4	10^3	10^2	10^1	10^0

Binary (base 2) 0, 1

128	64	32	16		8	4	2	1
2^7	2^6	2^5	2^4		2^3	2^2	2^1	2^0

Octal "oct" (base 8) 0, 1, 2, 3, 4, 5, 6, 7

32,768	4096	512		64	8	1
8^5	8^4	8^3		8^2	8^1	8^0

Hexadecimal "hex" (base 16) 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

65,536		4,096	256	16	1
16^4		16^3	16^2	16^1	16^0

Sample Problems – In Class

1. Convert binary number **0000 1001** to decimal

2. Convert binary number **0000 1101** to decimal

3. Convert binary number **1001 1010** to decimal

4. Convert binary number **0110 1101** to decimal

5. Convert binary number **0100 1001 0110** to decimal

6. Convert decimal number **19** to binary

7. Convert decimal number **77** to binary

8. Convert decimal number **176** to binary

9. Convert decimal number **275** to binary

10. Convert hex number **2B** to decimal and also to binary

11. Convert hex number **215** to decimal and also to binary

12. Convert hex number **ABC** to decimal and also to binary