



Number Conversions



Binary to Decimal

 This Binary Number	1	1	1	1	1	1	1	1	Is This Decimal Number
	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	
	128	64	32	16	8	4	2	1	255
	128 +	64 +	32 +	16 +	8 +	4 +	2 +	1 =	

 This Binary Number	1	0	0	1	0	1	0	1	Is This Decimal Number
	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	
	128	64	32	16	8	4	2	1	149
	128 +	0 +	0 +	16 +	0 +	4 +	0 +	1 =	

1.	11001001 =	
2.	01000111 =	
3.	10000110 =	
4.	00010001 =	
5.	10001000 =	
6.	00111110 =	
7.	01010101 =	
8.	10101010 =	

9.	01101110 =	
10.	00010111 =	
11.	11111000 =	
12.	11100010 =	
13.	00011101 =	
14.	01101111 =	
15.	10010111 =	
16.	11100101 =	



Number Conversions



Decimal to Binary

<i>This Decimal Number</i>	<i>Is This Binary Number</i>	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
		128	64	32	16	8	4	2	1
151		1	0	0	1	0	1	1	1

151
- 128

23
- 16

7
- 4

3
- 2

1

Arrows indicate the mapping from the decimal subtraction steps to the binary digits in the table: 128 to 1, 16 to 1, 4 to 1, 2 to 1, and 1 to 1.

1. 137 =

11. 200 =

2. 128 =

12. 171 =

3. 63 =

13. 19 =

4. 213 =

14. 240 =

5. 49 =

15. 222 =

6. 111 =

16. 73 =

7. 192 =

17. 248 =

8. 242 =

18. 136 =

9. 89 =

19. 79 =

10. 224 =

20. 252 =