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Help

HEX TO DECIMAL CONVERTER

You have already learned how to convert from a hexadecimal number to its decimal represntation. All you need to do is to calculate its value by multiplying each coefficient by its placeholder values and summing all of them together. If you want to practice, Choose a 4-digit hexadecimal number number. Try to calculate the decimal representation. Then type the number in the following field and click "convert" to check your result.

Decimal Value = $0 \cdot 16^3 + 5 \cdot 16^2 + 10 \cdot 16^1 + 11 \cdot 16^0$

Decimal Value = $0 + 1280 + 160 + 11 = 1451$

BINARY TO HEX CONVERTER

It's easy to switch back and forth hexadecimal and binary numbers. Since the base 16 is 2^4 , there is a one-to-one relationship between 1 hex digit and 4 binary digits. To convert the numbers, you can use the following table as the reference.

Binary Digits	Hexadecimal Digit
---------------	-------------------

0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

Type in a maximum 16-digit binary. Then click "convert" to see the corresponding hexadecimal number.

Binary number = 0000010110101011

Hexadecimal Number = 0x05AB

Help

HEX TO BINARY CONVERTER

Similarly, type in a maximum 4-digit hex number. Do not delete '0x' as the number prefix. Click "convert" to see the corresponding binary number.

Hexadecimal number = 0x4945

Binary Number = 0100100101000101

CHECKPOINT 2.2

What is the numerical value of the 8-bit hexadecimal number 0xFF?

$15 \times 16 + 15 = 255$

CHECKPOINT 2.3

Convert the binary number 01000101_2 to hexadecimal.

First, divide the binary into 4-bit nibbles, then convert the two 4-bit nibbles
 $0100_2 = 0x4$ and $0101_2 = 0x5$. Third, combine the two hex digits into one number $0x45$.

Convert the binary number 110010101011_2 to hexadecimal.

Hide Answer

First, divide the binary into 4-bit nibbles, then convert the three 4-bit nibbles

$1100_2 = 0xC$, $1010_2 = 0xA$ and $1011_2 = 0xB$. Third, combine the three hex digits into one number $0xCAB$

CHECKPOINT 2.5

Convert the hex number $0x40$ to binary.

Hide Answer

First, convert the two 4-bit nibbles

$0x4 = 0100_2$ and $0x0 = 0000_2$. Second, combine the 8 binary bits into one binary number 01000000_2

CHECKPOINT 2.6

Convert the hex number $0x63F$ to binary.

Hide Answer

First, convert the three 4-bit nibbles

$0x6 = 0110_2$, $0x3 = 0011_2$ and $0xF = 1111_2$. Second, combine the 12 binary bits into one binary number 011000111111_2

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