

Convert an Octal Number to Hexadecimal

<u>Hexadecimal</u>	<u>Binary/Octal Code</u>
0	000
1	001
2	002
3	003
4	004
5	005
6	006
7	007
8	010
9	011
A	012
B	013
C	014
D	015
E	016
F	017

Use an [Octal Division Table](#) to divide the octal number by octal 20; the resulting answer is the hexadecimal number.

Example 1: convert octal 1234 to hexadecimal

ABCDEFGHJIJ
001234000020 : Initial settings., Rod d=unit rod

ABCDEFGHJIJ
004234000020 : $1/2=4$

ABCDEFGHJIJ
005034000020 : $2/2=F1$

ABCDEFGHJIJ
005114000020 : $3/2=F1+1$

Now we have divided 1234 by 20. Integer part is 51 and remainder is 14. Let's continue to divide integer part 51 by 20. Rod b is unit rod now.

ABCDEFGHJIJ
021114000020 : $5/2=F2+1$

It's done. Every two rods of the answer represents one of the hex number. Now we grouping the answer like this, 02\11\14.

02---> means 2 in hex

11---> means 9 in hex ($8+1=9$)

14 ---> means C in hex ($8+4=12$)

So, 1234 in octal is 29C in hex.

Example 2: convert octal 4567 to hexadecimal,

ABCDEFGHJI

004567000020 : Initial settings. Rod d= unit rod.

ABCDEFGHJI

020567000020 : $4/2=F2$

ABCDEFGHJI

022167000020 : $5/2=F2+1$

ABCDEFGHJI

022467000020 : $1/2=4$

ABCDEFGHJI

022707000020 : $6/2=F3$

First portion of dividing is done. Integer part is 227 and remainder is 7. Continue to divide 227 by 20. Rod b = unit rod.

ABCDEFGHJI

102707000020 : $2/2=F1$

ABCDEFGHJI

110707000020 : $2/2=F1$

Now we grouping of the answer in the same way than above like this, 11\07\07

11---> means 9 in hex ($8+1=9$)

07---> means 7 in hex

07---> means 7 in hex

So, 4567 in octal is 977 in hex.

As we can see, this is very nice, powerful and fun way to convert octal in hexadecimal. Only a few simple steps needed to solve the answers

- Hannu