

To keep it simple we will just look at converting decimal numbers from 0~255. These will give a maximum of 2 digits of hexadecimal.

Question: Convert 243_{10} to hexadecimal.

1. Create the table showing the units and 16s column:

16	1

2. Divide the number by 16. $243/16 = 15$ remainder 3

3. So we now have:

16	1
15	3

4. In hexadecimal, A=10, B=11, C=12, D=13, E=14, F=15. So finally, convert any numbers into letters:

16	1
F	3

Answer: **F3**

256 is a very common number to be used in Computers. This was the number of different colours that could be displayed on older computers. Even today some user inputs only accept numbers from 0~255. This is because they are storing the number in 1 byte.

Question: Convert 255_{10} to hexadecimal.

1. Create the table:

16	1

2. Divide the number by 16. $255/16 = 15$ remainder 15

3. So we now have:

16	1
15	15

4. Convert the numbers to letters:

16	1
F	F

Answer: **FF**

Each digit of hexadecimal needs 4 bits (1 nibble) to store it. So the number 255 needs 1 byte of data to store it. This is why the number 255 is so common in Computing.