

9 + F (15) = 24, which is 16 + 8. So I have 1 “16” carrying over into the next place, and 8 left over in the ones place. Continuing with the addition:

$$\begin{array}{rcccccc}
 & 1 & & 1 & & 1 \\
 & 3 & 3 & 9 & 9 & 9 & 9 \\
 + & 0 & F & 0 & F & 0 & F \\
 \hline
 & 4 & 2 & A & 8 & A & 8
 \end{array}$$

Hmmm. Try this in a browser and you’ll see that the colors still aren’t that different, even adding 0F to each RGB channel. We really need to add more than 0F. How about 20 hex? 20 hex is: 2 sixteens and 0 ones, (which is equal to 32 decimal).

$$\begin{array}{rcccccc}
 & 3 & 3 & 9 & 9 & 9 & 9 \\
 + & 2 & 0 & 2 & 0 & 2 & 0 \\
 \hline
 & 5 & 3 & B & 9 & B & 9
 \end{array}$$

Practice it Yourself
Each question is worth 5 points.
Please show all of your work.

Add together the following hexadecimal numbers. Your result should be in hexadecimal.

- 1) 57 + 9C = _____
- 2) CF + 20 = _____
- 3) CC + 33 = _____
- 4) CC + 3A = _____
- 5) 333333 + CACACA = _____
- 6) CCFCA0 + 123456 = _____

Please write the following hexadecimal numbers as decimals. For example, “20” in hex is equal to “32” in decimal. Please show how you got your answer.

- 7) CC → _____

8) D0 → _____

9) 3F → _____

Subtraction

Hexadecimal subtraction works the same way as decimal subtraction, but when you borrow, you are borrowing 16 from the place to the left. For example:

$36 - A = ?$

$$\begin{array}{r} 2 \quad (22) \\ 3 \quad 6 \\ - \quad A \\ \hline 2 \quad C \end{array}$$

We borrowed 1 from the 3, which was equal to 16 ones. $16 + 6$ is 22 (written in parentheses because it is base 10). $22 - A (10) = C (12)$.

Practice it Yourself

Each question is worth 5 points. Please show your work.

Please complete the following hexadecimal subtractions:

10) $44 - B =$ _____

11) $3F - 2 =$ _____

12) $2A - F =$ _____

13) $3F3F0C - 101010 =$ _____