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Problems	Answers
1. $(243)_{10} = (X)_{16}$ $243/16 = 15 \text{ R } 3$ $15/16 = 0 \text{ R } 15$ $X = F3$	$X = F3$
2. $(ABC)_{16} = (X)_8$ $(A \cdot 16^2) + (B \cdot 16^1) + (C \cdot 16^0) = (2748)_{10}$ $2748/8 = 343 \text{ R } 4$ $343/8 = 42 \text{ R } 7$ $42/8 = 5 \text{ R } 2$ $X = 5274$	$X = 5274$
3. $(1AB)_{16} = (X)_{10}$ $1AB = 11011$ $(1 \cdot 16^2) + (10 \cdot 16^1) + (11 \cdot 16^0)$ $256 + 160 + 11$ $X = 427$	$X = 427$
4. $(11011101)_2 = (X)_8$ $011 \ 011 \ 101$ $3 \ 3 \ 5$ $X = 335$	$X = 335$
5. $(19.375)_{10} = (X)_8$ $19/2 = 9 \text{ R } 1$ $9/2 = 4 \text{ R } 1$ $4/2 = 2 \text{ R } 0$ $2/2 = 1 \text{ R } 0$ $1/2 = 0 \text{ R } 1$ $.375 \cdot 8 = 3$ $.75 \cdot 8 = 6$ $1.5 \cdot 8 = 12$ $X = 23.3$	$X = 23.3$
6. $(11.0001)_2 = (X)_{10}$ $011 \ 0001$ $3 \ 0.0625$ $X = 3.0625$	$X = 3.0625$
7. $(412)_5 = (X)_4$ $(4 \cdot 5^2) + (1 \cdot 5) + 2$ $100 + 5 + 2 = 107$ $107/4 = 26 \text{ R } 3$ $26/4 = 6 \text{ R } 2$ $6/4 = 1 \text{ R } 2$ $X = 1223$	$X = 1223$
8. $(10111.11)_2 = (X)_8$ $010 \ 111 \ .110$ $2 \ 7 \ .5 + .25 = .75$ $X = 27.75$	$X = 27.75$
9. $(B14.1)_{16} = (X)_{10}$ $11 \ 14 \ .1 \cdot 16^{-1}$ $11 \cdot 16^2 + 1 \cdot 16 + 4 \cdot 1 = 2836.0625$ $X = 2836.0625$	$X = 2836.0625$
10. $(255)_{10} = (X)_5$ $255/5 = 51 \text{ R } 0$ $51/5 = 10 \text{ R } 1$ $10/5 = 2 \text{ R } 0$ $2/5 = 0 \text{ R } 2$ $X = 2010$	$X = 2010$
11. Perform the following by taking the 2's complement of the negative number. Use 8 bits to store each number. $X = 175 - 200$ $Y = 200 - 250$	$X = (1110 \ 0111)_2 = (-25)_{10}$ $Y = (11001110)_2 = (-50)_{10}$

00000000
128632168+21
200 in binary 250 in binary
11001000 1111010

One's Comp

00000101 - 00000110

$$\begin{array}{r} 11001000 \\ 00000110 \\ \hline 11001110 \end{array}$$

$$\begin{array}{r} > 00110001 \\ + \\ \hline 00110010 \\ 1286432168421 \\ -50 \end{array}$$