

$$1) 10 \rightarrow 2 \rightarrow 16$$

$$4_{(10)} = 0100_{(2)} = 4_{(16)}$$

$$10_{(10)} = 1010_{(2)} = A_{(16)}$$

$$15_{(10)} = 1111_{(2)} = F_{(16)}$$

$$32_{(10)} = \underbrace{0010}_{2} \underbrace{0000}_0_{(2)} = 20_{(16)}$$

$$2) 10 \rightarrow 16 \rightarrow 2$$

$$3_{(10)} = 3_{(16)} = 0010_{(2)}$$

$$11_{(10)} = B_{(16)} = 1011_{(2)}$$

$$16_{(10)} = 10_{(16)} = 10000_{(2)}$$

$$\begin{array}{r|l} 16 & 16 \\ \hline 16 & 1 \\ \hline 0 & 0 \\ \hline 0 & 1 \end{array}$$

$$3) 2 \rightarrow 16$$

$$\underline{1010}_{(2)} = A_{(16)}$$

$$\underline{0111}_{(2)} = 7_{(16)}$$

$$\underline{1111}_{(2)} = F_{(16)}$$

$$\underline{1000} \underline{1010}_{(2)} = 8A_{(16)}$$

$$\underline{1101} \underline{0111}_{(2)} = 1AF_{(16)}$$

$$4) 3_{(16)} = 11_{(2)}$$

$$A_{(16)} = 1010_{(2)}$$

$$F_{(16)} = 1111_{(2)}$$

$$2B_{(16)} = \underline{0010} \underline{1011}_{(2)}$$

$$2F8_{(16)} = \underbrace{0010}_{(2)} \underbrace{1111}_{(2)} \underbrace{1000}_{(2)}_{(2)}$$

$$5) \begin{array}{r} b: 10 \\ 01 + \\ 01 \\ \hline 10 \end{array} (2)$$

$$b: \begin{array}{r} 100 \\ 10 + \\ 10 \\ \hline 100 \end{array} (2)$$

$$b: \begin{array}{r} 1110 \\ 111 + \\ 001 \\ \hline 1000 \end{array} (2)$$

$$b: \begin{array}{r} 000-1 \\ 1010 - \\ 0001 \\ \hline 1000 \end{array} (2)$$

$$b: \begin{array}{r} -1000 \\ 1000 - \\ 0010 \\ \hline 0110 \end{array} (2)$$

$$6) \begin{array}{r} 9 + \\ 1 \\ \hline A \end{array} (16)$$

$$\begin{array}{r} B + \\ 2 \\ \hline D \end{array} (16)$$

$$c: \begin{array}{r} 010 \\ 0F + \\ 01 \\ \hline 10 \end{array} (16)$$

$$c: \begin{array}{r} 00 \\ 10 + \\ A \\ \hline 1A \end{array} (16)$$

$$b: \begin{array}{r} 0-10 \\ 10 - \\ 02 \\ \hline E \end{array} (16)$$

$$\begin{array}{r} B - \\ 3 \\ \hline 8 \end{array} (16)$$

$$7) (9A7D)_{16} = (1001101001111101)_2 \Rightarrow (\underbrace{01100101}_{(2)} \underbrace{10000011}_{(2)})_2 = (6583)_{16}$$

$$(000F095D)_{16}$$

$$b: \begin{array}{r} 0000-1-1-1-10 \\ 100000000 - \\ 0000F095D \\ \hline 10000F6A3 \end{array} (16)$$

$$(4BA1)_{16} = (0100101110100001)_2$$

$$b: \begin{array}{r} -1-1-1-1-1-1-1-1-1-1-1-10 \\ 10000000000000000 - \\ 00100101110100001 \\ \hline 0111101000101111 \end{array} (2) = (F45F)_{16}$$

$$(7F)_{16} = (01111111)_2 \Rightarrow (10000001)_2 = (81)_{16}$$

$$(732A)_{16} = (0111001100101010)_2 \Rightarrow (\underbrace{10001}_{(2)} \underbrace{1001}_{(2)} \underbrace{1010}_{(2)} \underbrace{1010}_{(2)})_2 = (8C56)_{16}$$

$$8) (8)_{10} = (00001000)_2$$

$$(67)_{10} = (10000011)_2$$

$$(230)_{10} = (11111010)_2$$

$$9) (-6)_{10} = (11111010)_2$$

$$(-121)_{10} \Rightarrow (01111001)_2 \Rightarrow (10000111)_2$$

$$(70)_{10} \Rightarrow (01000110)_2$$