

① $91_{10} + C6_{16}$

$$91_{10} = 64 + 16 + 8 + 2 + 1 = 01011011_2$$

$$C6_{16} = 12 \cdot 16^1 + 6 \cdot 16^0 = 11000110_2$$

$$\begin{array}{r} 01011011_2 \\ + 11000110_2 \\ \hline 100100001_2 \end{array} \Rightarrow 289_{10}$$

$256 + 32 + 1$

② $11_8 - 11_{10}$

$$\begin{array}{r} 0010001_2 \\ - 001011_2 \\ \hline \end{array}$$

\Rightarrow

$$\begin{array}{r} 0010001 \\ + 110101 \\ \hline 1111110 \end{array}$$

1620

110100+1
110101
add "-11"

$$\begin{array}{r} 0000001 + 1 \\ - 000010_2 \\ \hline \end{array}$$

$$\boxed{-2_{10}}$$

3

$$12.3125_{10} + 0110_{I2Q2}$$

$$11000101_{I4Q4} + 00011000_{I4Q4}$$

$$\begin{array}{r} 11000101_{I4Q4} \\ + 00011000 \\ \hline 11011101_{I4Q4} \end{array}$$

$$(8 + 4 + 1 + .5 + .25 + .0625)_{10}$$

$$\boxed{13.8125_{10}}$$

4

$$5.75_{10} - 7.125_{10}$$

$$4 + 1 + .5 + .25$$

$$01011100_{I4Q4}$$

$$- 01110010$$

$$10001101 + 1$$

$$10001110_{I4Q4}$$

$$\begin{array}{r} 01011100 \\ + 10001110 \\ \hline 11101010_{I4Q4} \end{array}$$

$$- (00010101 + 1)_{I4Q4}$$

$$- 00010110_{I4Q4}$$

$$\boxed{-1.375_{10}}$$

⑤

$$9_{10} \quad 3_{10}$$

$$1001_2 \cdot 11_2$$

$$\begin{array}{r} 1001 \\ \cdot 11 \\ \hline \end{array}$$

$$\begin{array}{r} 1001 \\ 10010 \\ \hline \end{array}$$

$$\begin{array}{r} 11011 \\ (16 + 8 + 2 + 1)_{10} \\ 27_{10} \end{array}$$

6

$$(-5)_{10} \cdot (-6)_{16}$$

$$5_{10} \cdot 6_{10}$$

$$\begin{array}{r} 0101 \\ \cdot 110 \\ \hline 0000 \\ 0100 \\ 0100 \\ 0000 \\ \hline 001110 \\ 2^4 \ 2^3 \ 2^2 \ 2^1 \end{array}$$

$$(16 + 8 + 4 + 2)_{10}$$

$$24 + 4 + 2_{10}$$

30_{10}

7

$$9.5_{10} \cdot 2.625_{10}$$

10011000 I4Q4

00101010 I4Q4

$$\begin{array}{r} 10011000 \\ \cdot 00101010 \\ \hline 00000000 \\ 1001100000 \\ 00 \\ 10011000000 \\ 0000 \\ 100110000000 \end{array}$$

0001.0001110000

$$(16 + 8 + 1 + .5 + .25 + .125 + .0625)_{10}$$

$$24.9375_{10}$$