

$$6. -(5_{10}) = -(6_{10})$$

$$-5 \Rightarrow$$

$$\begin{array}{r} 0101_b \\ 1010_b \\ \hline 1011_b \end{array}$$

$$14_{10}$$

$$\begin{array}{r} 0110_b \\ 1001_b \\ \hline 1010_b \end{array}$$

$$14_{10}$$

1	1	1	1	0	1	1	1
0	0	0	0	0	0	0	0
1	1	1	1	0	1	1	X
0	0	0	0	0	0	X	X
1	1	0	1	1	X	X	X
1	0	1	1	X	X	X	X
0	1	1	X	X	X	X	X
1	1	X	X	X	X	X	X
1	1	1	1	X	1	1	X

$$\begin{array}{r} 11110 \\ U5 \quad 15_{10} \end{array}$$

$$\Rightarrow 16_{10} + 8_{10} + 4_{10} + 2_{10} = \boxed{30_{10}}$$

$$7. 95_{10} \cdot 24.9375_{10}$$

$$9.5_{10} \Rightarrow 1001.1_b \quad U4.1$$

$$14_{10}$$

$$24.9375_{10} \Rightarrow 10.101 \quad U2.3$$

$$12_{10}$$

~~$$\begin{array}{r} 1001_b \\ 1001_b \end{array}$$~~

$$\Rightarrow$$

$$\begin{array}{r} 1001.100_b \\ 10101_b \end{array}$$

0	0	0	0	1	0	0	1	1	0	0
0	0	0	0	0	0	0	0	0	0	X
0	0	1	0	0	1	1	0	0	X	X
0	0	0	0	0	0	0	0	X	X	X
1	0	0	1	1	0	0	X	X	X	X

$$11000.111100_b \quad U5.6 \quad 15_{10}$$

$$11000.1111_b \quad U5.4 \quad 15_{10}$$

$$16_{10} + 8_{10} + 0.5_{10} + 0.25_{10} + 0.125_{10} + 0.0625_{10} = \boxed{24.9375_{10}}$$

UQ = unsigned
Q = signed

$11_{10} + 6_{10}$

$91_{10} = 101101_2$ UQ7 18Q0
64, 32, 16, 8, 4, 2, 1
 $26_{10} = 1100011_2$ UQ8 19Q0

$$\begin{array}{r} 1111 \\ 1011011 \\ 11000110 \\ \hline 00100001 \end{array}$$

UQ9 19Q0

$2^0 + 2^5 + 2^8 = 1_{10} + 32_{10} + 256_{10} = 289_{10}$

289₁₀

$18 - 11_{10}$

$11_2 = 001001_2$ UQ4

$11_{10} = 1011_2 \Rightarrow \text{negative} \Rightarrow$

$$\begin{array}{r} 0100 \\ + 1 \\ \hline 0101 \end{array}$$
 14Q0

$$\begin{array}{r} 1001 \\ 0101 \\ \hline 1110 \end{array}$$

$\Rightarrow \text{negative} \Rightarrow$

$$\begin{array}{r} 0001 \\ \hline 0010 \end{array} = -2_{10}$$

$12.3125_{10} + 0.101702$

$12.3125_{10} = 11000101_2$ UQ4.4 14Q1

$$\begin{array}{r} 11000101 \\ 0110 \\ \hline 11011101 \end{array}$$

13.9125₁₀

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

$9_{10} = 1001_2$ UQ4 14Q0
 $3_{10} = 11_2$ UQ2 12Q0

$$\begin{array}{r} 1001 \\ \times 11 \\ \hline 1001 \\ 0000 \\ \hline 1001 \\ 0001 \\ \hline 1011 \end{array}$$

UQ6 16Q0

27₁₀