

Computer Architecture HW3

1. $9_{10} + C6_{16}$

$$\begin{array}{r} 1011011_2 \\ + 11000110_2 \\ \hline \end{array}$$

$$100100001_2 = 256_{10} + 32_{10} + 1_0 = \boxed{289_{10}}$$

2. $11_8 - 11_{10}$

$$\begin{array}{r} 001001_2 \\ - 001011_2 \\ \hline \end{array} \quad \begin{array}{r} 001001_2 \\ + 110101_2 \\ \hline \end{array}$$

$$111110 = \boxed{-2_{10}}$$

3. $12.3125_{10} + 01101101_2$

$$\begin{array}{r} 1100010104_{10} \\ + 000110004_{10} \\ \hline \end{array}$$

$$110110104_{10} = \boxed{13.8125_{10}}$$

4. $575_{10} - 7.125_{10}$

$$\begin{array}{r} 1011100303 \\ - 1110010303 \\ \hline \end{array} \quad \begin{array}{r} 0101110 \\ + 1000111 \\ \hline \end{array}$$

$$11101011403 = \boxed{-1.375_{10}}$$

5. $9_{10} \cdot 3_{10}$

$$\begin{array}{r} 1001_2 \\ \times 0011 \\ \hline \end{array}$$

$$16 + 8 + 2 + 1 = \boxed{27_{10}}$$

$$\begin{array}{r} 1001_2 \\ \times 0011 \\ \hline \end{array}$$