

HW 3

1. $9_{10} + 66_{16} \rightarrow 198_{10}$

$01011011_2 + 11000110_2$ 0800

11000110
 100100001

~~100100001~~ ~~0900~~

289_{10}

2. $11_8 - 11_{10} \rightarrow 1001_2 - 1101_2$ ~~0400~~ 15 $01001 - 01101$

01001

10011

11100

15

-4_{10}

$+10010 + \dots$

3. $12.3125_{10} + 0110_{1200}$

13.8125_{10}

$01100.0101_{1500} + 00001.1000_{1500}$

00001.1000

01101.1101

4. $5.75_{10} - 7.125_{10} = 0101.110_{1400} - 0111.001_{1400}$

1000.111

$\rightarrow +1000.000$

1110.001

1400

0001.111

-1.875_{10}

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

01001

1500

00011

00001001

00010010

00000000

00000000

011011

27_{10}

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

$0101 \rightarrow 1011$

$0110 \rightarrow 1010$

1011

14

1011

1010

11110110

~~00000000~~ 19

00000000

11110110

00000000

11011000

00011110

100001110

00000000

00010110

00000000

01011000

01101110

CONT

$$\begin{array}{r} -5_{10} \quad 1011 \\ -6_{10} \quad 1010 \end{array}$$

$$\begin{array}{r} 1011 \\ 1010 \\ \hline 01101110 \end{array}$$

$$\begin{array}{r} 1010 \\ 1011 \\ \hline 101010 \\ 1010100 \\ 0101000 \\ 0101000 \\ 10010110 \end{array}$$

This keeps being wrong, I'm splitting the problem
 $(-5_{10})(-6_{16}) = (5_{10})(-1_{10})(6_{16})(-1_{10})$

$$\begin{array}{r} 11 \\ 11 \\ \hline 111 \\ 110 \\ \hline 1001 \end{array}$$

I2
I2

$$01 \rightarrow 1 \cdot (5_{10})(6_{16})$$

$$\begin{array}{r} 0101 \\ 0110 \\ \hline 0000 \\ 01010 \\ 010100 \\ \hline 00011110 \end{array}$$

I4

I8

$$\boxed{30_{10}}$$

$$\begin{array}{r} 9.5_{10} \quad 1001.100 \quad | \quad 04Q3 \\ 2.625_{10} \quad 0010.101 \quad | \quad 04Q3 \end{array}$$

$$\begin{array}{r} 1001.100 \\ 0010.101 \\ \hline 1,1001100 \\ .100110000 \\ 10011000000 \\ \hline 801,000,11100 \end{array}$$

0896

$$\boxed{24.9375_{10}}$$

$$\begin{array}{r} 1.25_{10} \quad 111.01 \quad I3Q2 \\ 3.5_{10} \quad 011.10 \quad I3Q3 \end{array}$$

$$\boxed{-4.375_{10}}$$

$$\begin{array}{r} 111.01 \\ 011.10 \\ \hline 11111010 \\ 111110100 \\ 1111101000 \\ \hline 1111101.0110 \\ 0000110.1000 \\ \hline 000100.011 \end{array}$$

slowly
bc

→

$$\begin{array}{r} 011.10 \\ 111.01 \\ \hline 0.11.10 \\ 11.1000 \\ 111.0000 \\ 111.0000 \\ \hline 101.0110 \\ 011.0000 \end{array}$$