Practice problems

1.) $ABC_{16} \rightarrow$ —2, —8, —10

2.) $765_8 \rightarrow$ —2, —10, —16

3.) $1101100_2 \rightarrow$ —8, —10, —16

4.) $85_{10} \rightarrow$ —2, —8, —16

5.) $762_{10} \rightarrow$ —2, —8, —16

1.) $ABC_{16} \rightarrow$ —$_2$?

$= 1010\ 1011\ 1100_2$

$1010\ 1011\ 1100_2 \rightarrow$ —$_8$?

$= 5274_8$

$5274_8 \rightarrow$ —$_{10}$?

$5274_8 = 5\times8^3 + 2\times8^2 + 7\times8^1 + 4+8^0$

$= 2560_8 + 128_8 + 56_8 + 4_8$

$= 2748_8$

2.) $765_8 \rightarrow$ —$_2$?

$= 111\ 110\ 101_2$

$111\ 0101_2 \rightarrow$ —$_{16}$?

$= 1F5_{16}$

$1F5_{16} \rightarrow$ —$_{10}$?

$1F5_{16} = 1\times16^2 + F(15)\times16^1 + 5\times16^1$

$= 256_{10} + 240_{16} + 5_{10}$

$= 501_{10}$

3.) $1101100_2 \rightarrow$ —$_{16}$?

$= 6C_{16}$

$1101100_2 \rightarrow$ —$_8$?

$= 154_8$

$154_8 \rightarrow$ —$_{10}$?

$154_8 = 1\times8^2 + 5\times8^1 + 4\times8^0$

$= 64_{10} + 40_{10} + 4_{10}$

$= 108_{10}$

4.) $85_{10} \rightarrow$ —$_{16}$?

$= 55_{16}$

$16\overline{)85_{10}}$ R 5 (−80, 5)

$16\overline{)5_{10}}$ R 0 (−0, 5)

$55_{16} \rightarrow$ —$_2$?

$= 0101\ 0101_2$

$0101\ 0101_2 \rightarrow$ —$_8$?

$= 125_8$

5.) $762_{10} \rightarrow$ —$_{16}$?

$= 2FA_{16}$

$16\overline{)762_{10}}$ R 10 (−64, 122, −112)

$16\overline{)47}$ R 15 (−32)

$16\overline{)2}$ R 2 (−0)

$2FA_{16} \rightarrow$ —$_2$?

$= 0010\ 1111\ 1010_2$

$0010\ 1111\ 1010_2 \rightarrow$ —$_8$?

$= 1372$

Lab 3/2:

1.) $127_{10} \rightarrow \_\_\_{16}$?

$= 7 \times 16^1 + F \times 16^0$

$= 7F_{16}$

$7F_{16} \rightarrow \_\_\_{2}$?

$= 0111\ 1111_2$

$01111111_2 \rightarrow \_\_\_{8}$?

$= 177_8$

$16 \overline{)127_{10}}$ 7, 112, 15

$16 \overline{)15}$ 0, 0, 15 → F

2.) $1\ 0101_2 \rightarrow \_\_\_{16}$?

$= 15_{16}$

$1\ 0101 \rightarrow \_\_\_{8}$?

$= 25_8$

$25_8 \rightarrow \_\_\_{10}$?

$= 2 \times 8^1 + 5 \times 8^0$

$= 16_8 + 5_8$

$= 21_8$

3.) $71_8 \rightarrow \_\_\_\_{2}$?

$= 111\ 001_2$

$111001_2 \rightarrow \_\_\_{16}$?

$= 39_{16}$

$39_{16} \rightarrow \_\_\_{10}$?

$39_{16} = 3 \times 16^1 + 9 \times 16^0$

$= 48_{10} + 9_{10}$

$= 57_{10}$

4.) $AB_{16} \rightarrow \_\_\_{2}$?

$= 1010\ 1011_2$

$10101011_2 \rightarrow \_\_\_{8}$?

$= 253_8$

$253_8 \rightarrow \_\_\_{10}$?

$253_8 = 2 \times 8^2 + 5 \times 8^1 + 3 \times 8^0$

$= 128_{10} + 40_{10} + 3_{10}$

$= 171_{10}$