Part B

1. $181,336,782_{10}$

		Coef	R	Rm tot
16^8	4,294,967,296	0	181,336,782	0
16^7	268,435,456	0	181,336,782	0
16^6	16,777,216	A(10)	13,564,622	181,336,782
16^5	1,048,576	C(12)	981,710	144,901,404
16^4	65,536	E(14)	64206	145,883,114
16^3	4096	F(15)	2,766	145,947,320
16^2	256	A(10)	206	145,950,086
16^1	16	C(12)	14	145,950,292
16^0	1	E(14)	0	145,950,306

$ACEFACE_{16}$

2. $COFFEE_{16} \rightarrow B.5_{10}$

16^3	16^2	16^1	16^0	16^{-1}	16^{-2}
4096	256	16	1	0.0625	0.00390625
C	O	F	F	E	E

$$(C \times 16^3) + (O \times 16^2) + (F \times 16^1) + (F \times 16^0) + (E \times 16^{-1}) + (E \times 16^{-2})$$

$$(12 \times 16^3) + (0 \times 16^2) + (15 \times 16^1) + (15 \times 16^0) + (14 \times 16^{-1}) + (14 \times 16^{-2})$$

$$= 49407.92969_{10}$$

PART C

1. $1001\ 0101_2$ —Sub 2→ $1001\ 0100$ —flip→ $0110\ 1011$

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
128	64	32	16	8	4	2	1
0	1	1	0	1	0	1	1

123_{10}

2. 42_{10} —Bin→ ~~1010~~ 0010 1010

-13_{10} —Bin→ 0000 1101 —flip→ 1111 0010 —add 1→ 1111 0011

0010 1010 + 1111 0010 = 1 0001 1100 (ANS)

PART D

2. $61_{10} \xrightarrow{bin} 0011\ 1101$

$-32_{10} \rightarrow 0001\ 0101$

$0010\ 0000 \xrightarrow{dif} 1101\ 1111 \xrightarrow{Add\ 2} 1110\ 0000$

$$\begin{array}{r} 0011\ 1101 \\ +\ 1110\ 0000 \\ \hline \boxed{1}0001\ 1101 \end{array}$$

CANS