Pongpat Osatthanon 6413050023 2

① Convert 201 base 10 to 8-bit binary

2	201	1
2	100	0
2	50	0
2	25	1
2	12	0
2	6	0
2	3	1
	1	

→ Ans: 11001001 ✱

② Convert 201 base 10 to base 3 using the division method

3	201	0
3	67	1
3	22	1
3	7	1
	2	

→ Ans: 21110 ✱

③ Convert 1111100111 binary to hexadecimal → base 16

11	1110	0111
2^1+1	$2^3 2^2 2^1 0$	$0\ 2^2\ 2^1\ 2^0 \times 1$
	8+4+2+0	0+4+2+1
3	14 = E	7

Ans: 3E7 ✱

(4) Convert C0FE base 16 to binary

C = 12	0	F = 15	E = 14
2 | 12 | 0		2 | 15 | 1	2 | 14 | 0
2 | 6 | 0		2 | 7 | 1	2 | 7 | 1
2 | 3 | 1		2 | 3 | 1	2 | 3 | 1
1		1	1
1100	0000	1111	1110

Ans: 1100 0000 1111 1110 #

(5) 1011 0101 + 0101 1011

```
 1111  111
 1011 0101 +
 0101 1011
(1)0001 0000
```

an extra digit (1) → (6)

Ans: 1 0001 0000 #

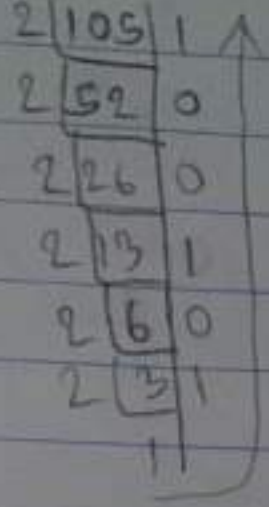
(6) **Ans:** Yes #

(7) 0010 1101 - 0001 0111

```
0010 1101 -
0001 0111
0001 0110
```

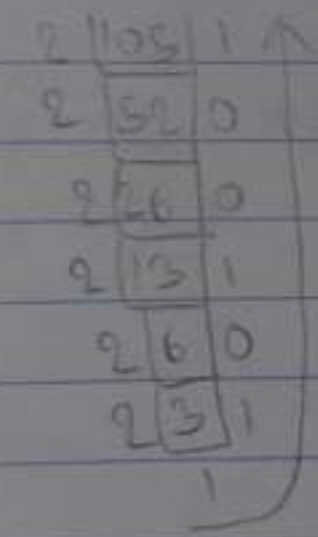
Ans: 0001 0110 #

(8) Convert 105 base 10 to 8-bit binary representation



Ans: 1101001 ✱

(9) Convert -105 base 10 to 8-bit signed magnitude representation



Ans: 1101001 ✱

(10.) Convert −105 base 10 to 8-bit 2's complement representation

2	105	1
2	52	0
2	26	0
2	13	1
2	6	0
2	3	1
	1	

1101001

↓ 1's

0010110 +

1

0010111 2's

Ans: 0010111 ✱

(11) Convert 105 base 10 to excess −M representation (use the lowest possible M)

105 − 7 = 98

2	98	0
2	49	1
2	24	0
2	12	0
2	6	0
2	3	1
	1	

Ans: 1100010 ✱

(12) What areas do you think you need more practice on?

- ○ base conversion
- ○ binary arithmetic
- ⊘ 2's complement representation
- ○ excess-M representation
- ○ signed-magnitude representation