Lecture : 2

ECE 111 | 11/08

Today's class:

1. Recap
2. Conversion of various formats

Recap!

1. Write down $(17-30)_{10}$ in Hex

2. What is the decimal equivalent of $(742)_{16}$

$(4)_{16} \equiv (4)_{10}$

$(A)_{16} \equiv (10)_{10}$

$(10)_{16} \equiv 16$

$(20)_{16} \equiv$

$(10)_{16} = (16)_{10}$

$(30)_{16} \equiv (48)_{10}$

$(60)_{16} = (96)$

$(70)_{16}$

⋮

⋮

$$(A0)_{16} = (160)_{10}$$

$$(D0)_{16} \equiv (208)_{10}$$

$$(F0)_{16} \equiv (240)_{10}$$

$$(100)_{16} \equiv (256)_{10}$$

Converting Hex to decimal

$$(a_n \ldots a_2\ a_1\ a_0)_{16}$$

$$= a_0 16^0 + a_1 16^1 \cdots a_n 16^n$$

Similarly any number can be converted into decimal in the same manner

$$(a_n a_{n-1} \cdots a_0)_r = \left(\sum_{i=0}^{n} r^i \cdot a_i \right)_{10}$$

Ans: $(1000)_8 = (512)_{10}$

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Converting

decimal to x-base

$(243)_{10}$ into binary

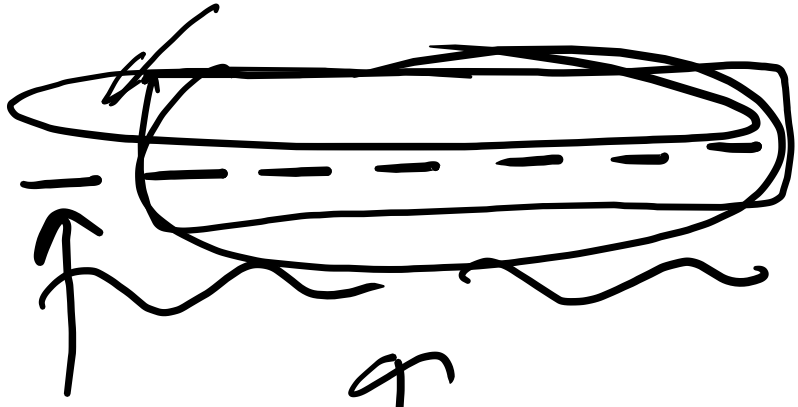
$(111)_2 = 7$

$(8)_{10} =$ You remainder after

Smallest '5' digit in binary

$$(10000)_2 = (16)_{10}$$

$$(243)_{10} =$$

$(243)_{10} =$ 1 

$(243 - 128) = 115$

$(15)_{10} = (1111)_2$

15	
7	1
3	1
1	1
0	1

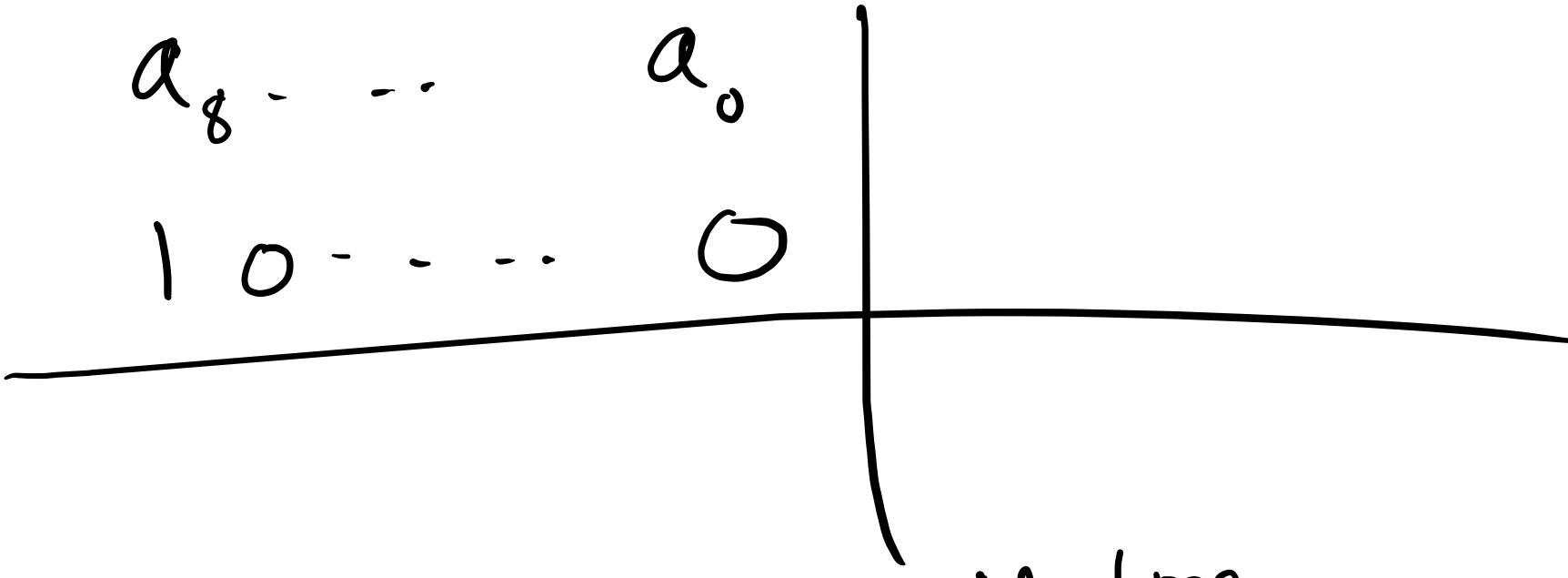
$(1111)_2$

$(52)_{10}$

Hex: divide by 16

52	
3	4 ↑
0	3

$= (34)_{16}$



tell the largest 6 digit binary #

$(111111)_2$

$= 2^0 \cdot 1 + 2^1 \cdot 1 + 2^2 \cdot 1 \cdots 2^5 \cdot 1$

$= 1 + 2 + 4 \cdots 32$

$= (63)_{10}$