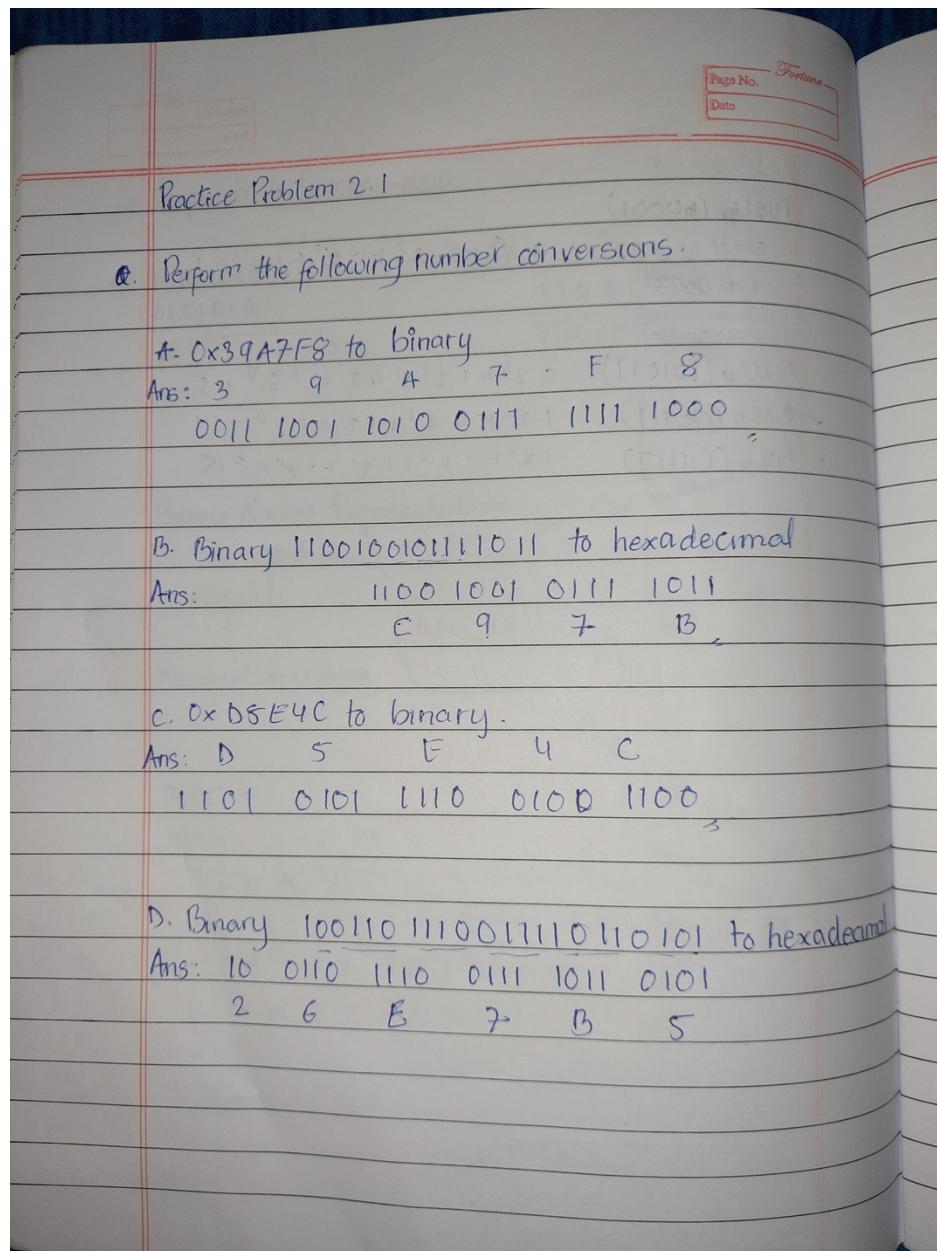
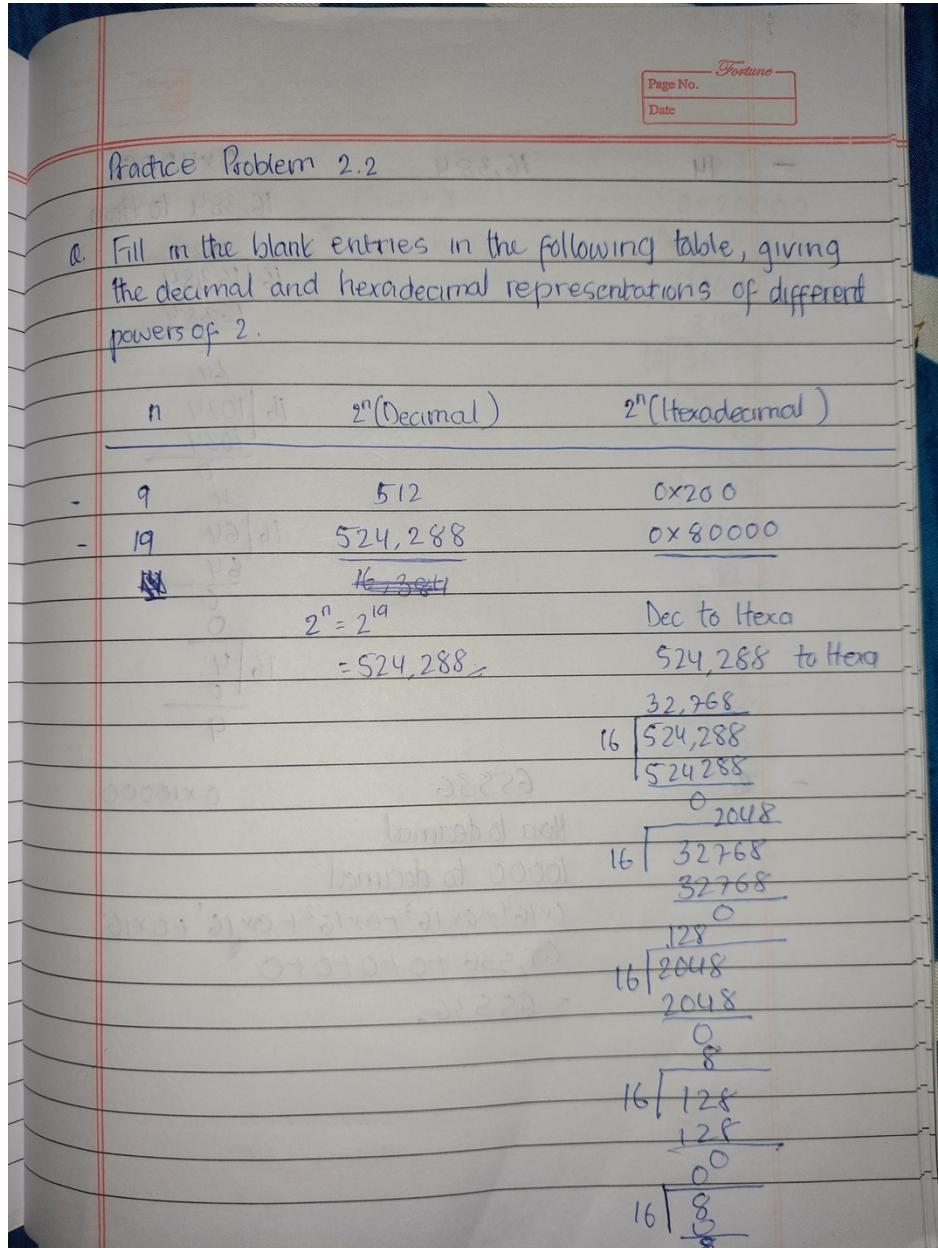


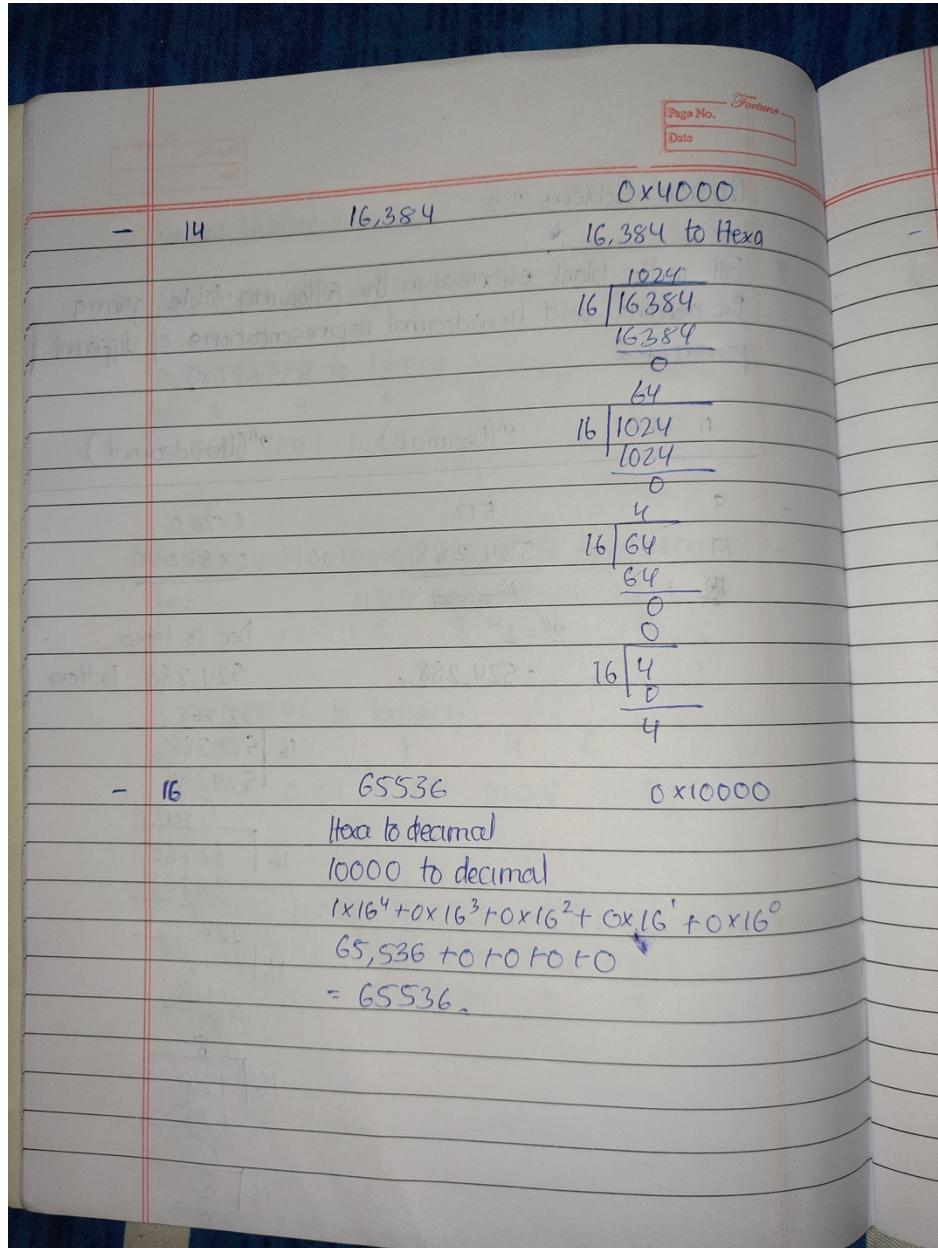


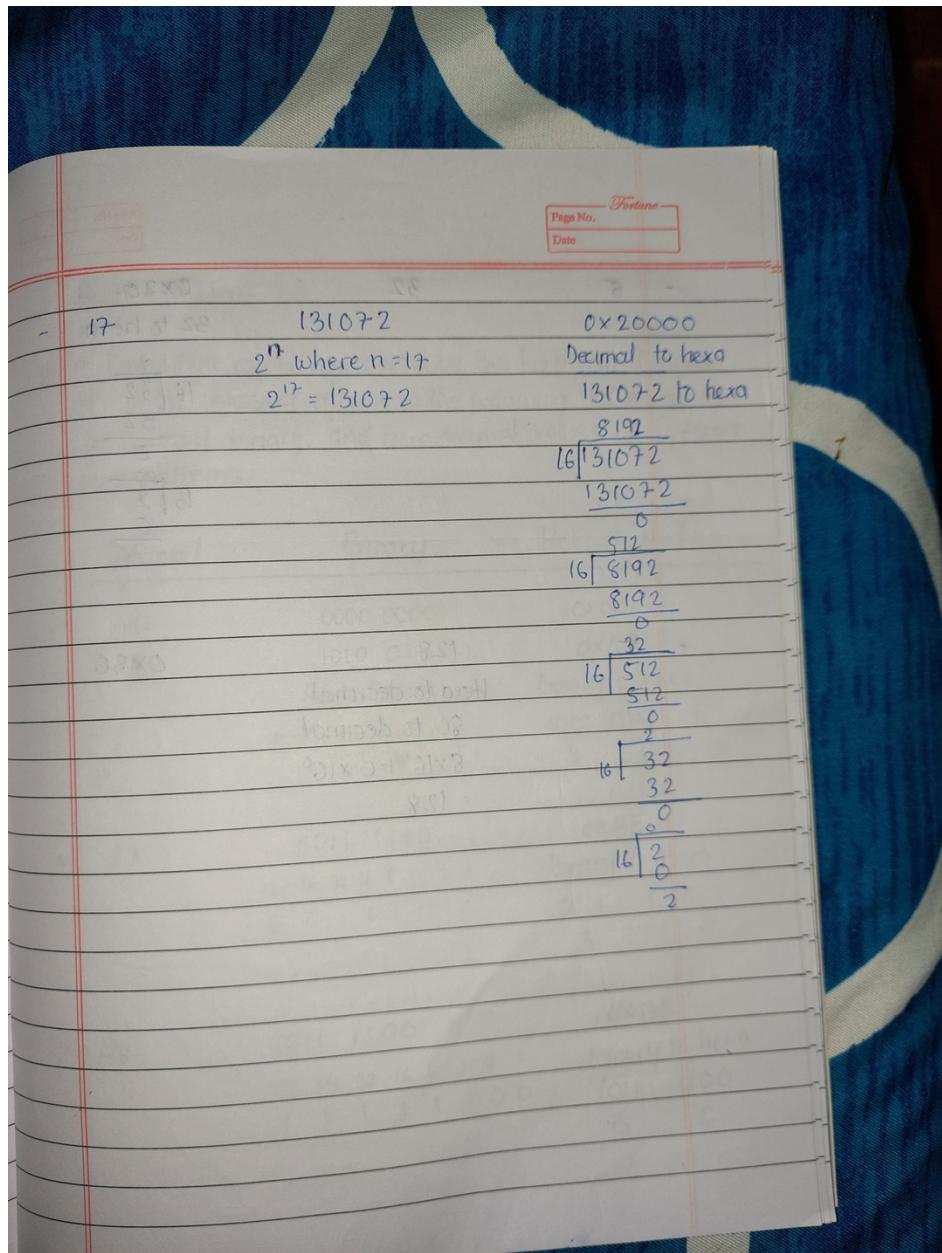
Lab Practical 1

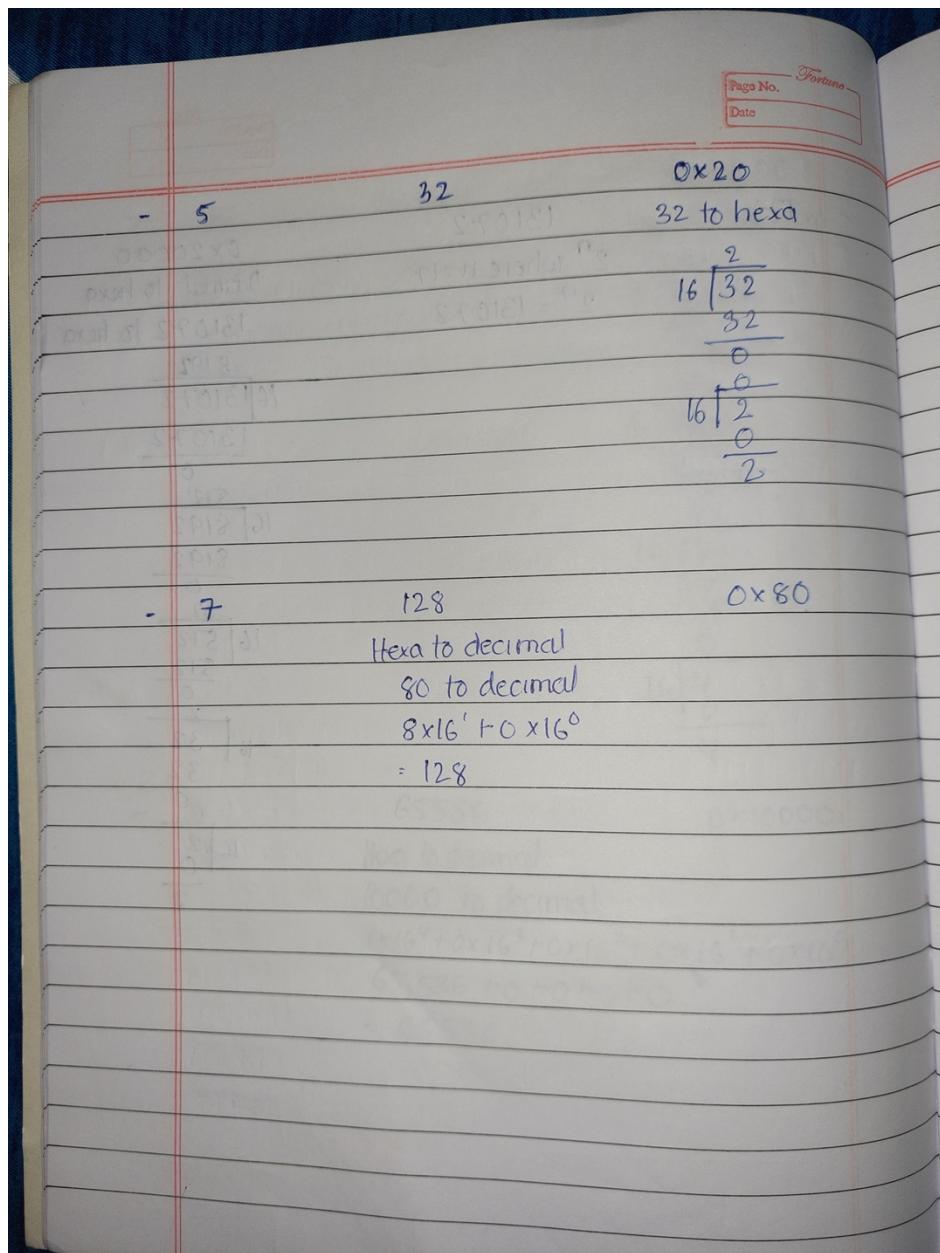
Computer Systems I

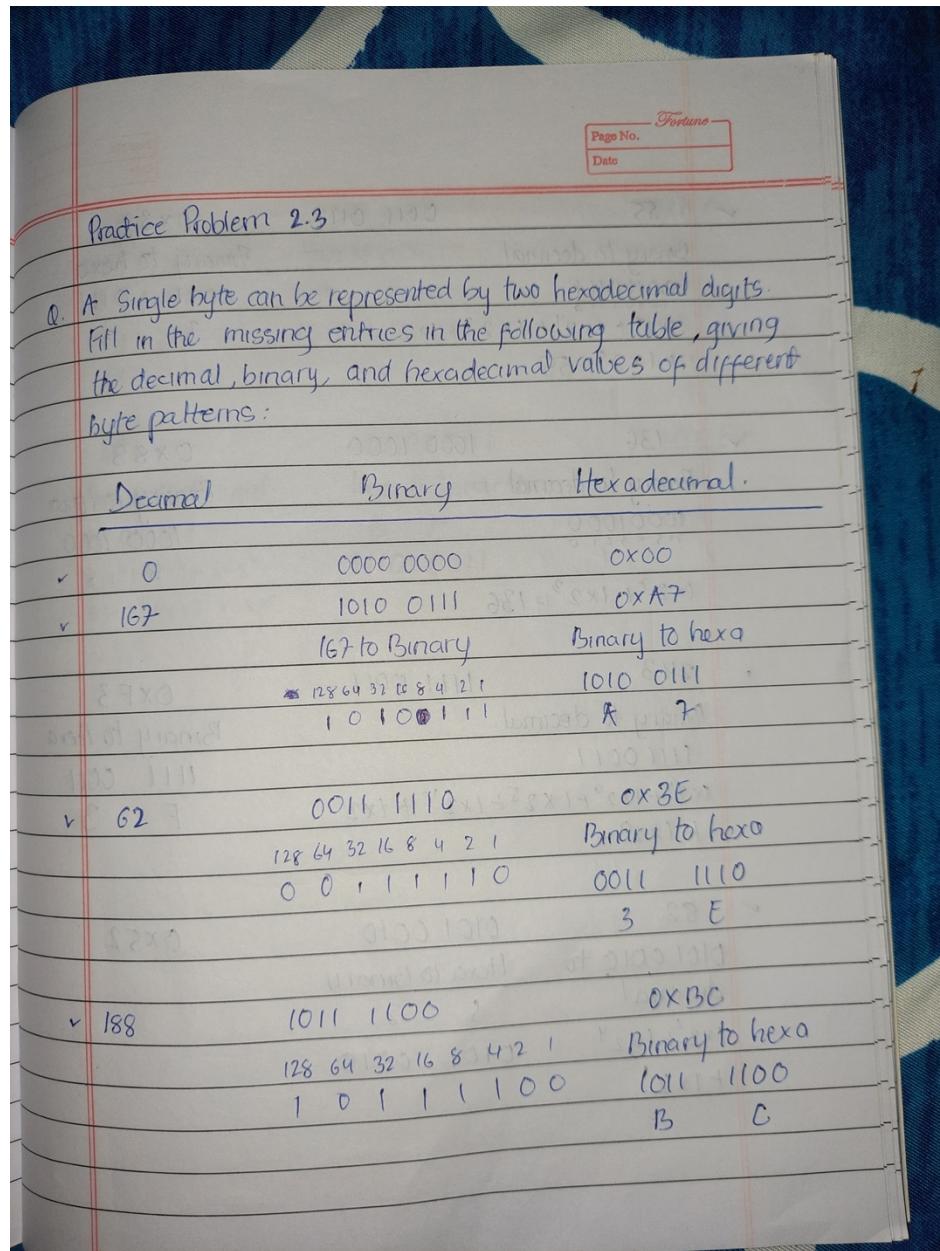




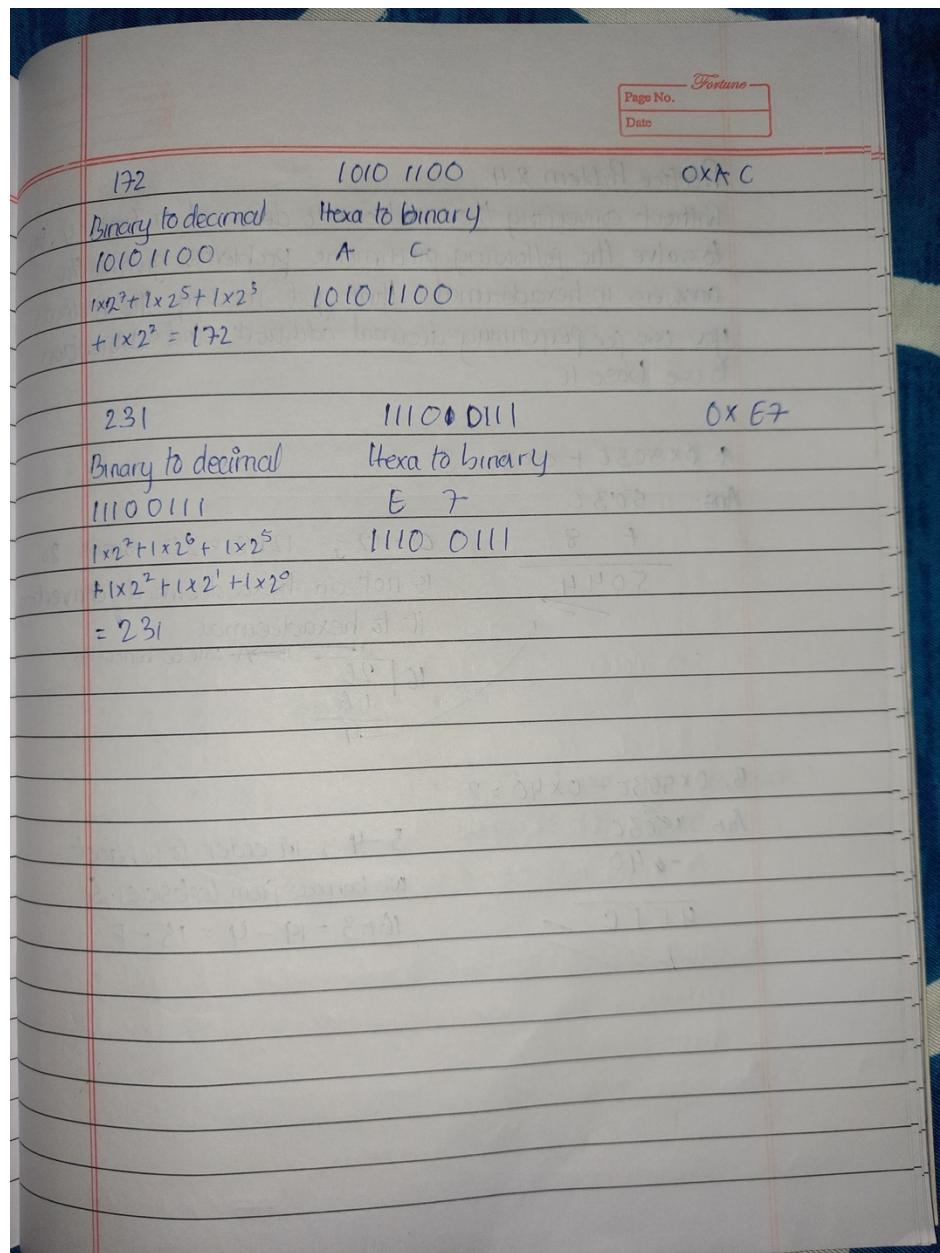








			Page No.	Date
✓	55	0011 0111	Binary to hexa	0x87
	Binary to decimal	0011(0111)	0011 0111	
		$1 \times 2^5 + 1 \times 2^4 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 = 55$	3 7	
✓	136	1000 1000	Binary to Hexa	0x88
	Binary to decimal	1000 1000	1000 1000	
		$1 \times 2^7 + 1 \times 2^3 = 136$	8 8	
✓	243	1111 0011	Binary to Hexa	0XF3
	Binary to decimal	1111 0011	1111 0011	
		$1 \times 2^8 + 1 \times 2^6 + 1 \times 2^5 + 1 \times 2^4 + 1 \times 2^1 + 1 \times 2^0 =$	F 3	
✓	82	0101 0010	0x52	
	0101 0010 to decimal	5 2		
		$1 \times 2^6 + 1 \times 2^4 + 1 \times 2^1$	0101 0010	



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Date _____

Practice Problem 2.4

Without converting the numbers to decimal or binary, try to solve the following arithmetic problems, giving the answers in hexadecimal. Hint: just modify the methods you use for performing decimal addition and subtraction to use base 16.

A. $0x503C + 0x8 = ?$

Ans: $503C$

$$\begin{array}{r}
 503C \\
 + 8 \\
 \hline
 5044
 \end{array}$$

$C = 12$; $12 + 8 = 20$ Since 20 is not an hexa decimal. Converting it to hexadecimal.

$16 \overline{)20}$ → A will be borrowed.

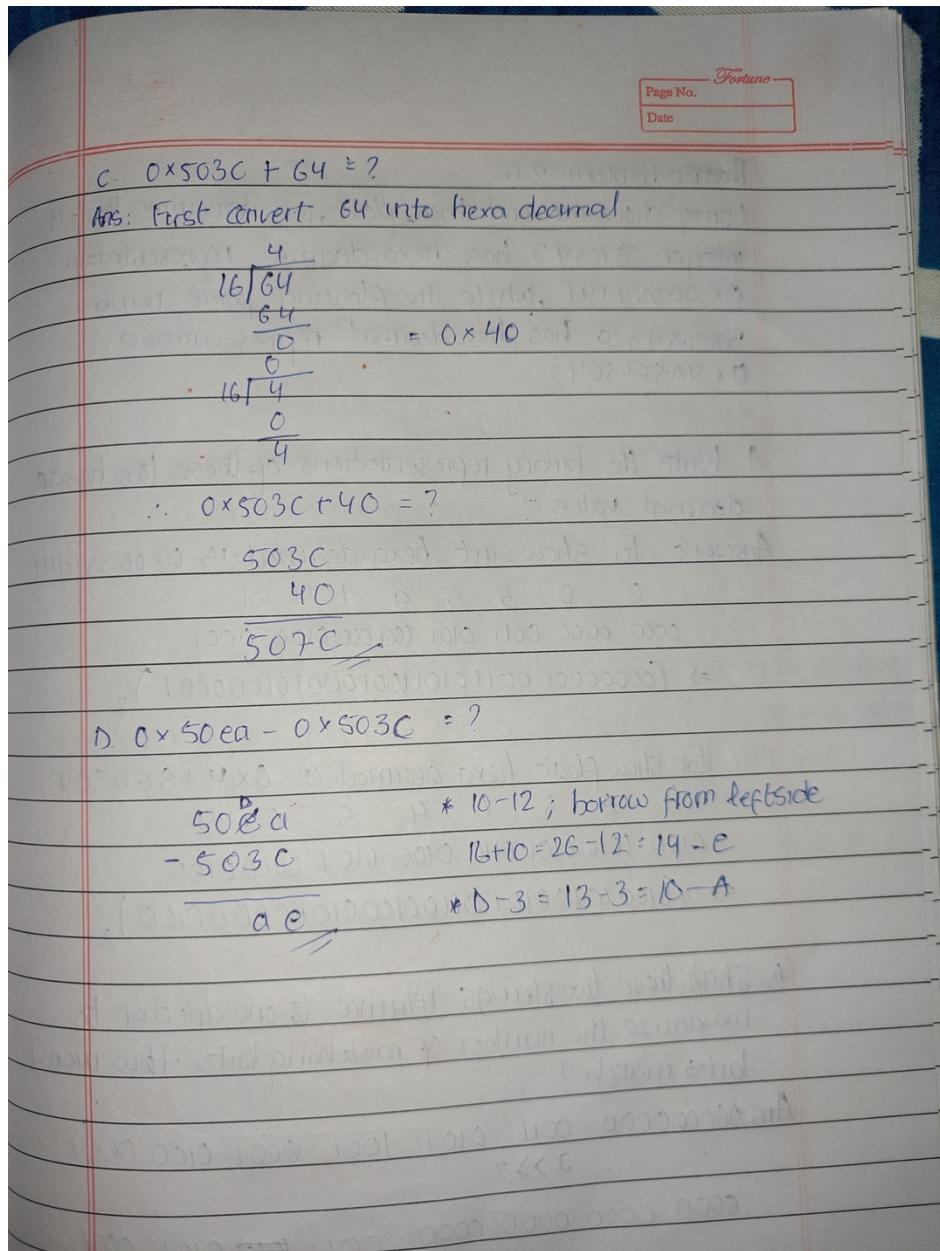
$$\begin{array}{r}
 1 \\
 16 \overline{)20} \\
 -16 \\
 \hline
 4
 \end{array}$$

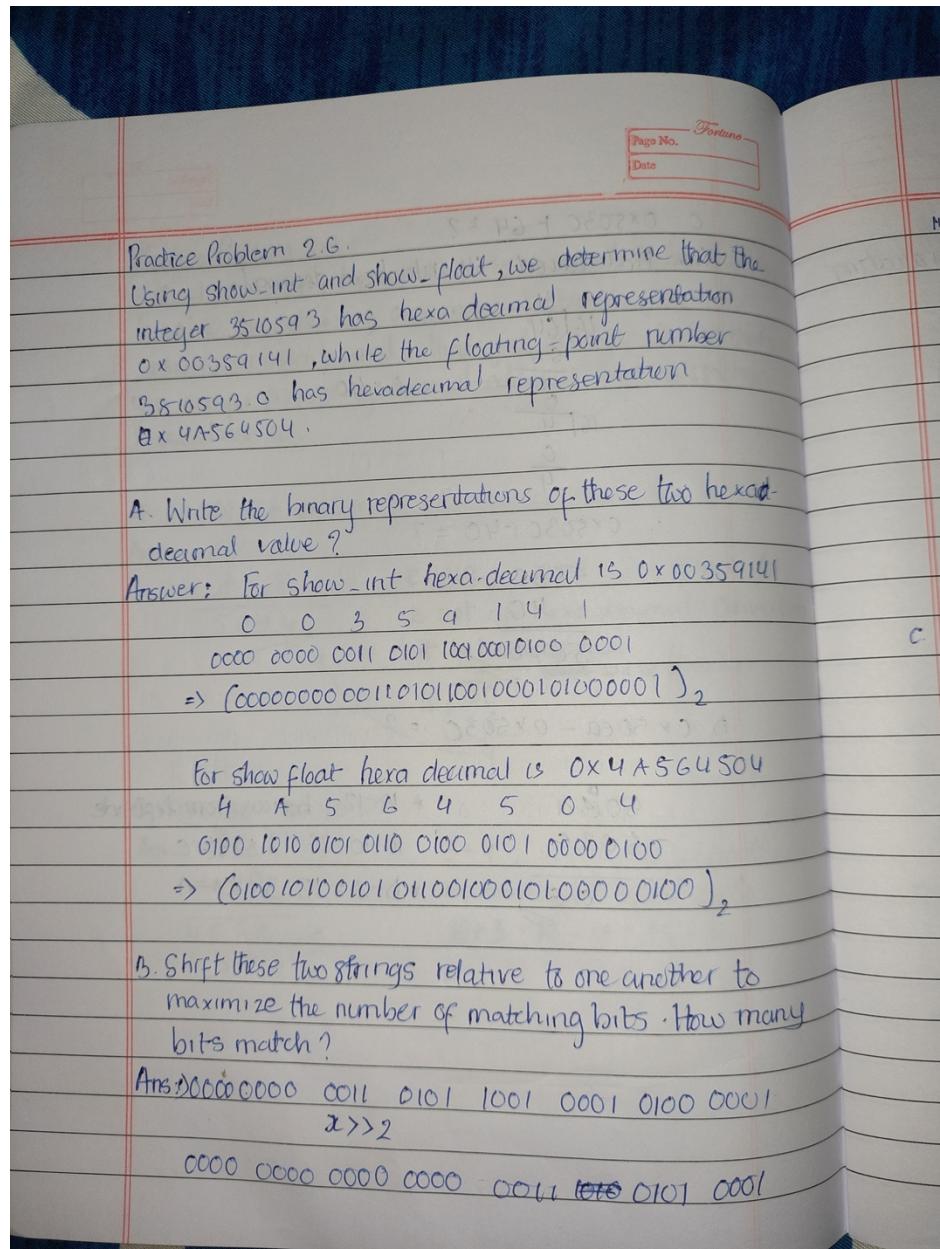
B. $0x503C - 0x40 = ?$

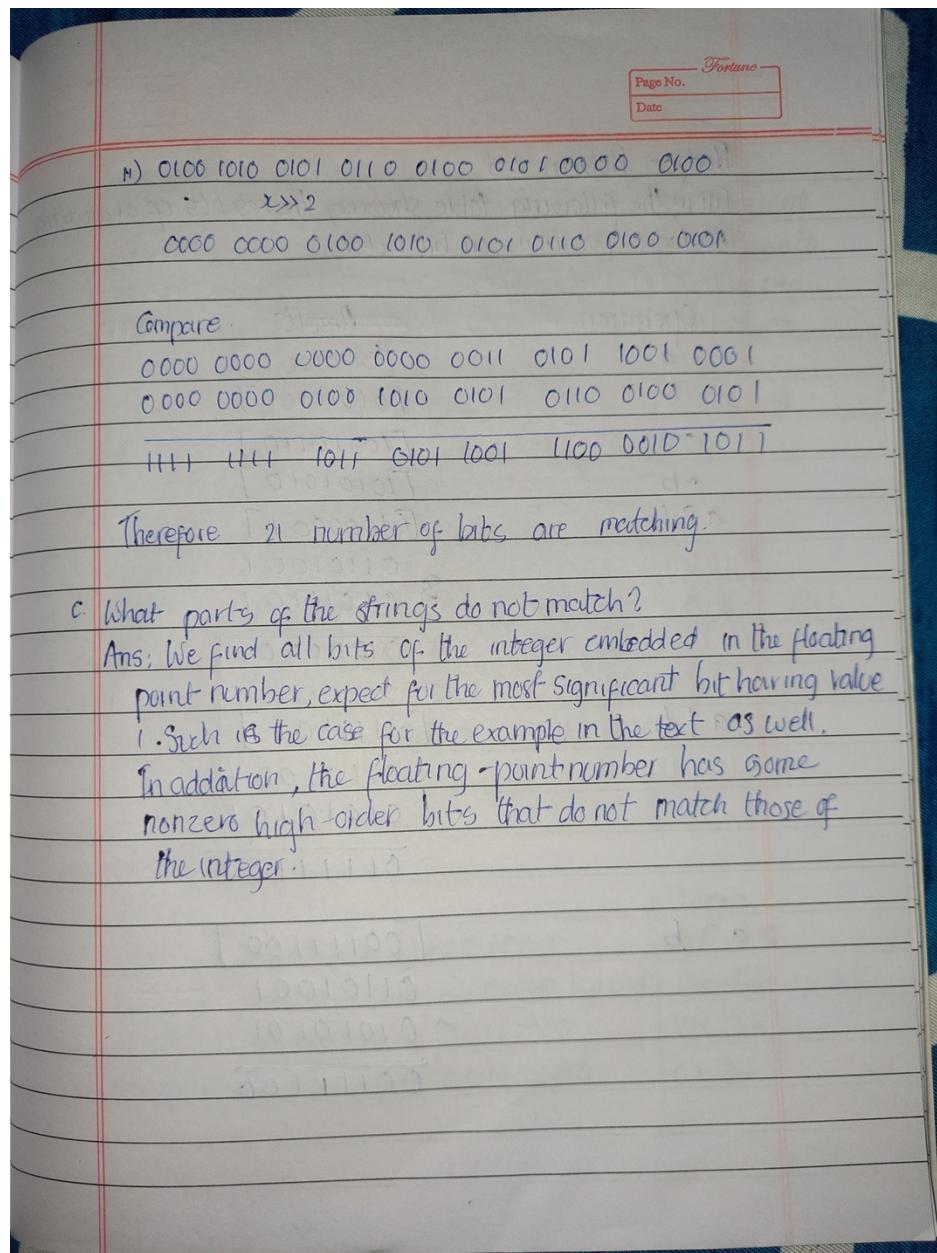
Ans: $4\overset{16}{5}03C$

$$\begin{array}{r}
 4\overset{16}{5}03C \\
 - 40 \\
 \hline
 4FFC
 \end{array}$$

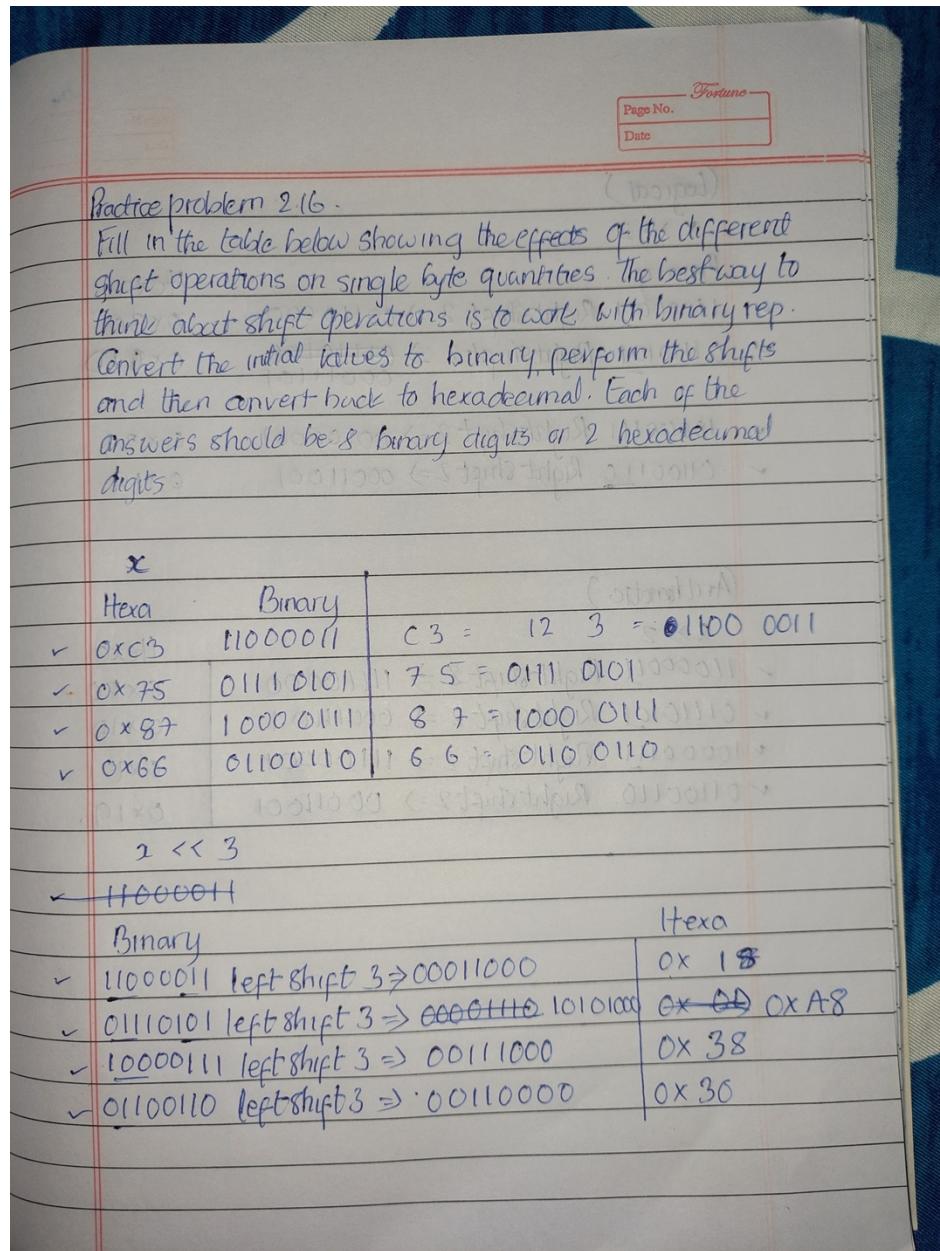
$3 - 4$; in order to subtract we borrow from left side. So $16 + 3 = 19 - 4 = 15 - F$







Operation	Result
a	[01101001]
b	[01010101]
$\sim a$	[10010110]
$\sim b$	[10101010]
a \wedge b	[01000001]
	01101001
	01010101
	<u>01111101</u>
$a \vee b$	[0111101]
	01101001
	01010101
	<u>01111101</u>
$a \wedge b$	[00111100]
	01101001
	<u>01010101</u>
	<u>00111100</u>



		Page No.	Fortune
		Date	
(Logical)			
x >> 2			
Binary		Hexa	
✓ 11000011 Rightshift 2 => 00110000		0x30	
✓ 01110101 Rightshift 2 => 00011101 00011101		0x1D	
✓ 10000111 Rightshift 2 => 00100001		0x21	
✓ 01100110 Rightshift 2 => 00011001		0x19	
(Arithmetic)			
1100 2 >> 2		Hexa	
✓ 11000011 Rightshift 2 => 1110000110		0xF0	
✓ 01110101 Rightshift 2 => 0001110111		0x1D	
✓ 10000111 Rightshift 2 => 1110000111		0xE1	
✓ 01100110 Rightshift 2 => 00011001		0x19	
8 >> 8			
01000000			
01000000			
01000000			
01000000			
01000000			
01000000			
01000000			
01000000			