Set 01

01. $(0011\,0111\,0011\,1010)_{Ex3}$

3	11	9	10
-3	-3	-3	-3
0	8	6	7

$\Rightarrow (0867)_{10}$

7 | 867
7 | 123 - 6
7 | 17 - 4
7 | 2 - 3
0 - 2

$\Rightarrow (2346)_7$

02. $55 - (-16) = 55 + 16$

$+55 = (0011\,0111)_{2s}$

$+16 = (0001\,0000)_{2s}$

$(0100\,0111)_{2s}$

We are adding 2 positive numbers and the answer is also positive. So, no overflow.

03.

```
132 | 121231 | 000312
    0
    12
     0
    121
      0
    1212
    1122
     303
     132
    1111
     330
     121
```

$132 \times 0 = 0$

$132 \times 1 = 132$

$132 \times 2 = 330$

$132 \times 3 = 1122$

Set 02

01. $(0101\,1100\,1001\,1011)_{Ex\text{-}5}$

5	12	9	11
-5	-5	-5	-5
0	7	4	6

$\Rightarrow (0746)_{10}$

8 | 746
8 | 93 - 2
8 | 11 - 5
8 | 1 - 3
0 - 1

$\Rightarrow (1352)_8$

02. $25 - (-11) = 25 + 11$

$+25 = (011001)_{2s}$

$+11 = (001011)_{2s}$

$(100100)_{2s}$

We are adding 2 positive numbers but the answer is negative. So, overflow exists.

03.

213 | 123231 | 000231

0

12
0
123
0
1232
1032
2003
1311
321
213
102

$213 \times 0 = 0$
$213 \times 1 = 213$
$213 \times 2 = 1032$
$213 \times 3 = 1311$