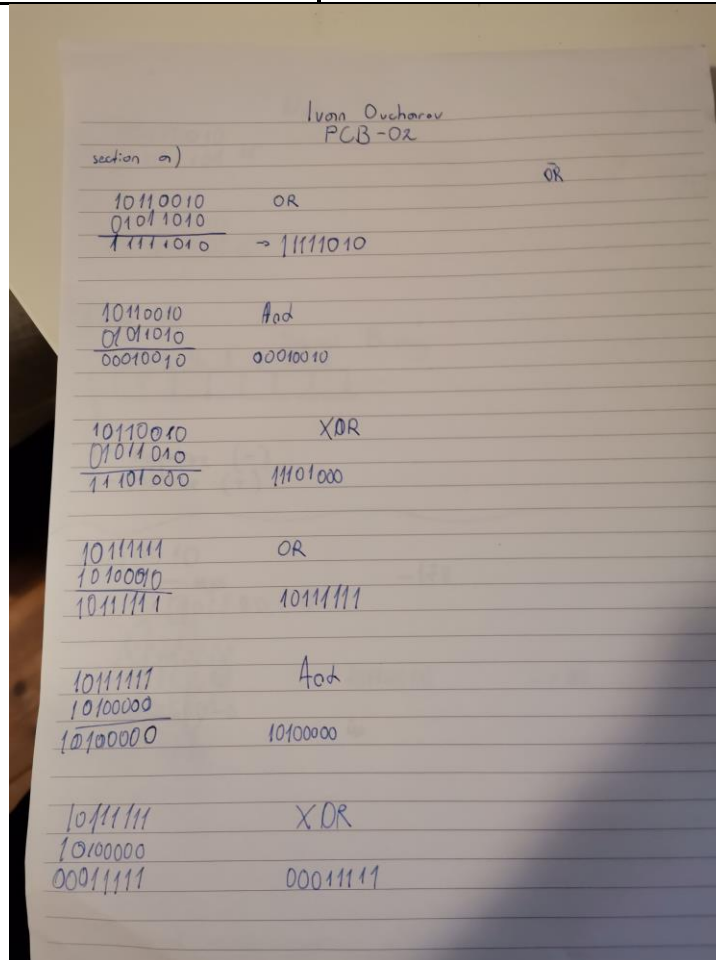


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PCB-02 Fontys ICT

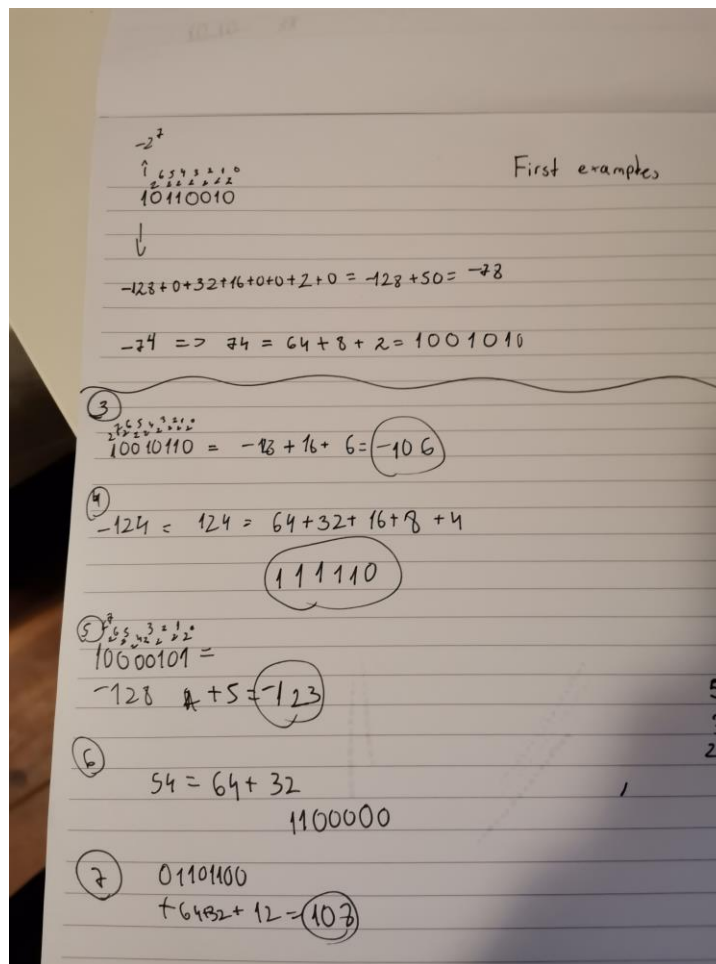
<i>Bitwise operations</i>	<i>Result</i>
<i>10110010 OR 1011010</i>	<i>11111010</i>
<i>10110010 AND 1011010</i>	<i>00010010</i>
<i>10110010 XOR 1011010</i>	<i>11101000</i>
<i>10111111 OR 10100010</i>	<i>10111111</i>
<i>10111111 AND 10100010</i>	<i>10100000</i>
<i>10111111 XOR 10100010</i>	<i>00011111</i>
<i>NOT 10110010</i>	<i>01001101</i>
<i>NOT 10100010</i>	<i>01011101</i>



<i>Signed - Binary</i>	<i>Decimal</i>
10110010	-78
110110	-74
10010110	-106
1111100	-124
10000101	-123
01100000	94
01101100	108

$$10110010 = -128 + 0 + 32 + 16 + 0 + 0 + 2 + 0 = -78$$

$$-74 = 64 + 8 + 2 = 110110$$



<i>Calculation</i>	<i>Binary result</i>	<i>Decimal result</i>
00000101 + 00000011	1000	8
00001101 + 00011000	100101	37
00110011 + 01010101	10001000	136

$11100111 + 00100001$	100001000	132
$11001001 + 01011011$	100001000	264

$$11001001 + 01011011 = 100001000$$

$1+1 = 0$ but we carry a 1

$1+1+1 = 1$ and we carry 1

