

$$Q1) 29 + 21 = 011101 + 010101$$

$$\begin{array}{r} 011101 \\ + 010101 \\ \hline 110010 \end{array}$$

+1

سریز دارد

+4

$$-29 - 21 = 100011 + 010101$$

+2

$$= 100011 + 101011$$

+2

$$100011$$

$$\begin{array}{r} \text{Carry } 101011 \\ + 100011 \\ \hline 1001110 \end{array}$$

+1

سریز دارد

+4

$$c) (11001001)_2$$

$$(10001110)_2$$

+2

-2 because there is no solution

$$d) (1100100)_2$$

$$(10101101)_2$$

+2

-2 because there is no solution

$$3) (11001001)_2$$

1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	0	1	0	0	1	1	0	0	1

$$H(1) = \text{XOR}(3, 5, 7, 9, 11) = 1$$

+8

$$H(2) = \text{XOR}(3, 6, 7, 10, 11) = 1$$

$$H(4) = \text{XOR}(5, 6, 7, 12) = 0$$

$$H(8) = \text{XOR}(9, 10, 11, 12) = 0$$

$$3) (473406, 12234)_8 = (?)_{16}$$

$$\left( \overbrace{100111}^{47} \overbrace{011100}^{34} \overbrace{000110}^{06} / \overbrace{001010}^{12} \overbrace{011100}^{23} \overbrace{100}^{4} \right)_2$$

$$= (27706/2938)_{16}$$

+7