

1)

$$2^n > 10^9$$

$$\log_2 2^n > \log_2 10^9$$

$$n \log_2 2 > \log_2 10^9$$

$$n > \log_2 10^9 / \log_2 2$$

$$n > 29.897$$

2)

1	0	0	0		0x00000008
1	0	0	0		0x00000008
1	1	1	1		0x0000000F
1	0	0	1		0x00000009
1	0	0	1		0x00000009

a) 0x00088F99

b)

11F9

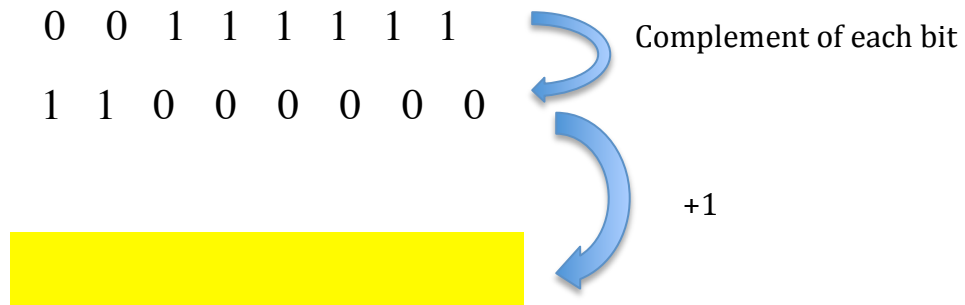
0	0	0	1
0	0	0	1
1	1	1	1
1	0	0	1
1	1	1	1

Answer: The letter d.

3)



4)



5)

a)

$$2^n = 2^{48}$$

$$2^{40} = 1 \text{ Terabyte}$$

$$2^{40} \cdot 2^8 = 1 \text{ TB} \cdot 2^8$$

$$= 256 \text{ Terabytes}$$

b)

	0xA10008
	0xA10009
	0xA1000A
	0xA1000B
	0xA1000C