IEEE 32 BITS FLOATING POINT FORMAT

**1)**

|  |  |  |
| --- | --- | --- |
| **SIGN** | **EXPONENT** | **MANTISSA** |
| 1 Bit | 8 Bit | 23 Bit |

The number is pozitif so sign is 0.

If the number is negative, it have to be 1.

Exponent should be 8 bit.

We can find 98\*10⁻⁴

We can find exponent such that we use (-) and 4 of 10⁻⁴

Mean of (-) “we should start 1” than we should create 4 by binary system.

It become 100 than our exponent is ready:

10000100

Mantissa consist 23 bit.

We will use 98 such that we have to write 98 by binary system.

If we write 98 by binary system, we can find

Thus, we find it:

|  |  |  |
| --- | --- | --- |
| **Sign** | **Exponent** | **Mantissa** |
| 0 | 10000100 | 00000000000000001100010 |

2)

1 10000010 11100000000000000000000

The first number indicate positive or negative so our number is 1 if it is negative

For 1000010 =130

For 11100000000000000000000 =½ +¼ +⅛

= 0.875

Our formula is

(-1)\*(1+0.875)\*2 ¹³°⁻¹²⁷

=-1\*1.875\*8

= -5.625

We can find the answer -5.625