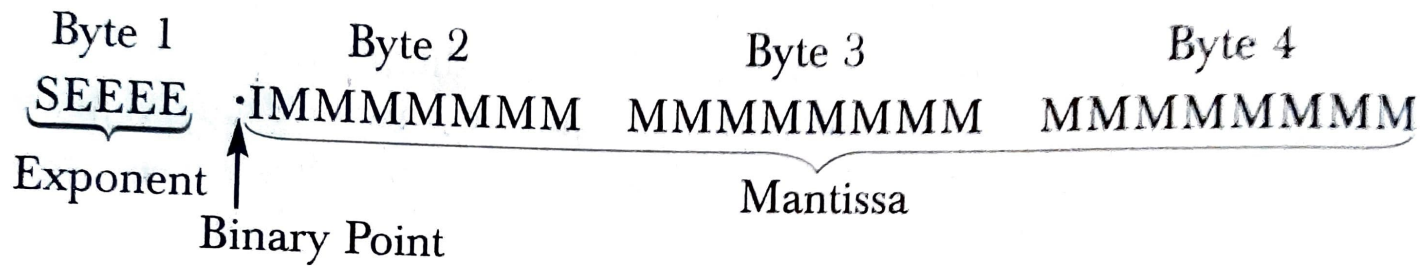


represented in floating-point by all 0's in the mantissa and exponent.

Two main standard forms of floating-point numbers are from the following organizations that decide standards: ANSI (American National Standards Institute) and IEEE (Institute of Electrical and Electronic Engineers). The ANSI 32-bit floating-point numbers in byte format with examples are given below:

Byte Format:



S = Sign of Mantissa, E = Exponent Bits in 2's complement, M = Mantissa Bits

Examples:

$$\begin{aligned}
 13 &= 1101 = 0.1101 \times 2^4 \\
 &= 00000100 \ 11010000 \ 00000000 \ 00000000 \\
 -17 &= -10001 = -0.10001 \times 2^5 \\
 &= 10000101 \ 10001000 \ 00000000 \ 00000000 \\
 -0.125 &= -0.001 = -.1 \times 2^{-2} \\
 &= 11111110 \ 10000000 \ 00000000 \ 00000000
 \end{aligned}$$