



(a) Format

$$\begin{aligned}
 1.1010001 \times 2^{10100} &= 0 \ 10010011 \ 101000100000000000000000 = 1.6328125 \times 2^{20} \\
 -1.1010001 \times 2^{10100} &= 1 \ 10010011 \ 101000100000000000000000 = -1.6328125 \times 2^{20} \\
 1.1010001 \times 2^{-10100} &= 0 \ 01101011 \ 101000100000000000000000 = 1.6328125 \times 2^{-20} \\
 -1.1010001 \times 2^{-10100} &= 1 \ 01101011 \ 101000100000000000000000 = -1.6328125 \times 2^{-20}
 \end{aligned}$$

(b) Examples

**Figure 9.18 Typical 32-Bit Floating-Point Format**