

## 1.4

### CHAPTER SUMMARY

- Electronic functions appear in many devices, including cellphones, digital cameras, laptop computers, etc.
- Amplification is an essential operation in many analog and digital systems.
- Analog circuits process signals that can assume various values at any time. By contrast, digital circuits deal with signals having only two levels and switching between these values at known points in time.
- Despite the “digital revolution,” analog circuits find wide application in most of today’s electronic systems.
- The voltage gain of an amplifier is defined as  $v_{out}/v_{in}$  and sometimes expressed in decibels (dB) as  $20 \log(v_{out}/v_{in})$ .
- Kirchoff’s current law (KCL) states that the sum of all currents flowing into any node is zero. Kirchoff’s voltage law (KVL) states that the sum of all voltages around any loop is zero.
- Norton’s theorem allows simplifying a one-port circuit to a current source in parallel with an impedance. Similarly, Thevenin’s theorem reduces a one-port circuit to a voltage source in series with an impedance.