

# Number Systems

## 1.1 Number Systems

1. What is another name for the base-10 number system?
2. To make reading and writing large numbers easier we use \_\_\_\_\_ notation.
3. Convert the following numbers from binary to decimal.
  - a. 101
  - b. 1011
  - c. 10001
  - d. 11110
4. List the numerals that make up the octal number system.
5. Convert the following numbers from octal to decimal.
  - a. 10
  - b. 17
  - c. 54
  - d. 103
6. List the numerals that make up the hexadecimal (hex) number system.
7. Convert the following numbers from hex to decimal.
  - a. B
  - b. 10
  - c. 2A
  - d. 61

## 1.2 Number Conversion

8. Convert the following numbers from binary to decimal.

a. 101101

b. 10001000

9. Convert the following binary numbers to octal.

a. 101001

b. 111001101

10. Convert the following binary numbers to hex.

a. 10010011

b. 100100111111

11. Convert the following decimal numbers to binary using ladder technique.

a. 32

b. 247

12. Convert the following decimal numbers to binary using positional notation technique.

a. 29

b. 258

13. Convert the following octal numbers to binary.

a. 30

b. 752

14. Convert the following hexadecimal numbers to binary.

a. D3

b. 7A1