1. What is the decimal equivalent of the largest binary integer that can be obtained with (a) 16 bits and (b) 24 bits?

2. Convert the following binary numbers to decimal: (a) 1010010, (b) 10101010.101, and (c) 10100110.

3. Convert the following decimal numbers to hexadecimal: (a) 1492, (b) 1215, and (c) 1066.

4. Add and subtract the following numbers without converting to decimal: (a) (234)\textsubscript{8} and (471)\textsubscript{8} (b) (a63)\textsubscript{16} and (bc)\textsubscript{16} (c) (101001)\textsubscript{2} and (100101)\textsubscript{2}.

5. Multiply the following numbers without converting to decimal. (a) (12)\textsubscript{8} and (34)\textsubscript{8} (b) (101010)\textsubscript{2} and (11101)\textsubscript{2}.

6. A certain computer represents information in groups of 48 bits. How many different integers can be represented in (a) binary, (b) BCD, and (c) 8-bit ASCII, using all 48 bits in a word?

7. What pattern of bits is used to represent the integer 237 (a) in binary notation (b) in BCD notation (c) in ASCII notation?