1-3

	Binary	Octal	Hexadecimal
16	10000	20	10
17	10001	21	11
18	10010	22	12
19	10011	23	13
20	10100	24	14
21	10101	25	15
22	10110	26	16
23	10111	27	17
24	11000	30	18
25	11001	31	19
26	11010	32	1A
27	11011	33	1B
28	11100	34	1C
29	11101	35	1D
30	11110	36	1E
31	11111	37	1F

1-9

Decimal	Binary	Octal	Hexadecimal
369.3125	101110001.0101	561.24	171.5
189.625	10111101.101	275.5	BD.A
214.625	11010110.101	326.5	D6.A
62407.625	1111001111000111.101	171707.5	F3C7.A

1-12

(a)

$1010 \times 1100 = 1111000$

(b)
$0110 \times 1001 = 110110$

(c)
$1111001 \times 011101 = 110110110101$

1-13

Similar to the division of decimal numbers, we have:

```
      10001
101)1010110
    101
      000
      000
        001
        000
          011
          000
            110
            101
              1
```

So the quotient is 10001 and the remainder is 1.

1-16

(a) $(BEE)_r = (2699)_{10}$
$$11 \times r^2 + 14 \times r + 14 \; = \; 2699$$
Then r = 15.

(b) $(365)_r = (194)_{10}$
$$3 \times r^2 + 6 \times r + 5 \; = \; 194$$
Then r = 7.

1-18

(a) 0100 1000 0110 0111
$(0100\ 1000\ 0110\ 0111)_{BCD} = (4867)_{10} = (1\ 0011\ 0000\ 0011)_2$
So it is 1 0011 0000 0011.

(b) 0011 0111 1000.0111 0101
$(0011\ 0111\ 1000.0111\ 0101)_{BCD} = (378.75)_{10} = (1\ 0111\ 1010.11)_2$
So it is 1 0111 1010.11.

1-19

$(715)_{10} = (0111\ 0001\ 0101)_{BCD}$

$(354)_{10} = (0011\ 0101\ 0100)_{BCD}$

1-28

Hexadecimal	Gray Code
0	0000
1	0001
2	0011
3	0010
4	0110
5	0111
6	0101
7	0100
8	1100
9	1101
A	1111
B	1110
C	1010
D	1011
E	1001
F	1000