```
(b) (AF)16=(10101111)2=(257)8

        56                      scratch pad      octal
       x257                     6x7=              52
        502  <--P1              5x7=              43
       346   <--P2                                502  <--P1
      134    <--P3              6x5=               36
     (17562)8                   5x5=              31
                                                  346  <--P2
                                6x2=               14
                                5x2=              12
                                                  134  <--P3

      (17562)8=(001111101110010)2
              =(1331302)4

1.16 (a)(11010.010)2 = (0.11010010)x2^5
        sign bit = 0
        exponent =5+127=(1000 0100)
        fraction=1010 0100...0
        0 1        8 9              31
       |0|10000100|10100100.....0|

     (b) 2 |432                .26
         2 |216     0          x 2
         2 |108     0         0.52
         2 |54      0          x 2
         2 |27      0         1.04
         2 |13      1          x 2
         2 |6       1         0.08
         2 |3       0          x 2
         2 |1       1         0.16
            0       1          x 2
                              0.32
                               x 2
                              0.64
                               x 2
                              1.28
                               x 2
                              0.56
                                .
                                .
                                .

   (432.26)10=(110110000.01000010100011)2
             =(0.11011000001000010100011)x2^9
   sign bit = 0
   exponent =9+127=136=(10001000)2
   fraction =(10110000010000101000111)2
   0 1        8 9                       31
  |0|10001000|10110000010000101000111|
```



```
(c)-(10100111.1001)2= -(0.101001111001)x2^8
    sign bit =1
    exponent = 8+127=135=(10000111)2
    fraction =(010011110010...0)2
    0 1        8 9              31
   |1|10000111|010011110010...0|

(d)-(236.77)10=-(11101100.110001010001110)2
              =-(0.11101100110001010001110)x2^8

    sign bit =1
    exponent=8+127=135=(10000111)2
    fraction=(11011001100010100011110)2
    0 1        8 9                      31
   |1|10000111|11011001100010100011110|

1.17 (1) The entry in row two column two is in error.

     (2) 1 0 1 1
         1 1 0 1
         1 0 1 1
         1 1 0 1

1.18        6 3 -1 1   <--weighted
        0   0 0  1 1
        1   0 0  0 1
        2   0 1  1 0
        3   0 1  1 1
        4   0 1  0 1
        5   1 0  1 0
        6   1 0  0 0
        7   1 0  0 1
        8   1 1  1 0
        9   1 1  0 0

1.19        3 2 -1 1   <--weighted
        0   0 0  1 1
        1   0 0  0 1
        2   0 1  0 0
        3   1 0  1 1
        4   1 1  1 0
        5   1 1  0 0

1.20 (a)(0100 1001 0101 0111)bcd=(4 9 5 7)bcd
     (b)(0100 1001 0101 0111)2 =(18772)10
     (c)Excess-3 = (1 6 2 4)
     (d)ASCII Code = ) 7

1.21 (a)(356)10 =(101100100)2
                =(0000 0001 0110 0100) in 16-bit register

     (b)(356)bcd=(0011 0101 0110)bcd
                =(0000 0011 0101 0110) in 16-bit register

     (c)(AI)ASCII=(1010 0001 0101 0001)ASCII
                 =(1010 0001 0101 0001) in 16-bit register
```