1 2 4 8 16 32 64 128 256

128 64 32 16 8 4 2 1

4.1 Convert the following decimal integers to their natural binary equivalents

a) 12

1100

b) 42

0010 1010

c) 255

1111 1111

4.2 Convert the following natural binary integers to their decimals equivalents

a) 110

6

b)111 0110

0111 0110

2+4+16+32+64= 118

4.3 Complete the table below

Decimal Binary Hex

37

99

Bin:

0010 0101

0110 0011

Hex:

0x25

0x63

Dec Bin Hex

1010 1010

0110 1101 1101

Dec:

2+8+32+128=

1+4+8+16+64+128+512+1024

Dec Bin Hex

256

CAB

Bin:

0010 0101 0110

1100 1010 1011

Dec:

2+4+16+64+512

1+2+8+32+128+512+1024

4.5 Convert the following decimal numbers to their binary equivalents. Calculate the answer to five binary places and round the result up or down as necessary

a) 1.5

1.0001

b) 1.1

1.11111

c) 1/3

.01

4.6 Convert the following binary numbers to their decimal equivalents

a) 1.1

3/2

b) .0001

1/5

c) 111.101

7(3/4)

31/4

4.7

Dec Bin Hex

.25

.35

Dec Bin Hex

11011.0111

111.1011

Dec Bin Hex

2.08

Ab.c