Comp ARch

1.)

1	9~~1~~/64	R=27
0	~~27~~/32	R=27
1	27/16	R=11
1	11/8	R=3
0	3/4	R=3
1	3/2	R=1
1	1/1	R=1

$$1100 \cancel{\#} 0110$$

$$1 1 0 1 1 1 1$$

$$\begin{array}{r} 1100\ 0110 \\ + 101\ 1011 \\ \hline 10010\ 0\ 0001 \end{array}$$

$$1 + 32 + 256 = 289$$

$$10100 = 10101$$

2.) $1001 - 1011$ ~~+~~ 01001

$$\begin{array}{r} 01001 \\ + 10101 \\ \hline (0)11110 = -2 \end{array}$$

$$600001 + 1 = 10 = 2$$

3.)

$$\begin{array}{r} 1100.0101 \\ + 0001.1000 \\ \hline 1101.1101 = 13.8125 \end{array}$$

5.)

$$\begin{array}{r} 1001 \\ \underline{\quad 11} \\ 11 \\ + 11000 \\ \hline 11011 = 16 + 8 + 2 + 1 = 24 + 3 = 27 \end{array}$$

$$9 \cdot 3 = 27$$

b.)

101 → negate → 110
↓
1010+1=1011   1001+1=1010

1010.
. 1011.
───────
111
1111 0110
+ 1011 000
─────────
1 1001 110 → 0011 0001+1=1100 10

1010
× 1011
─────
1243321
1111 0110   0
+   0
 110110 00
 1011
 1011
 11
+11
──────────
1000 0011 110 → = 16+8+4+2 = 24+6=30

14 = 18
× 14

-(1.01) × 11.10   13
10.10+1=1011

8.)

1.0.11
× 11.10
──────
1221
1110110   0
1110110 0
+ 11011000
─────────
1010 11.1010 → 0100.0101 +0001
                 0100.0110
                 -4.375