Jacob
Rummer

4. a) 0x000000C4 = 1100 0100 = $2^2 + 2^6 + 2^7 = 196$

b) 0xFFFFFEC6 = 1111 1111 1111 1111 1111 1110 1100 0110

= 0000 0000 0000 0000 0000 0001 0011 1001 +1

= $2^0 + 2^3 + 2^4 + 2^5 + 2^8 + 1 = -314$

c) 0xFFFFFFFF = 1111 1111 1111 1111 1111 1111 1111 1111

: 0000 0000 0000 0000 0000 0000 0000 0000 +1 = -1

5) a) 0xBF800000 = 1011 1111 1000 0000 0000 0000 0000

s=1

exp = 01111111 = $2^0 + 2^1 + 2^2 + 2^3 + 2^4 + 2^5 + 2^6 = 127$

Frac = 0

$= -1 \cdot 2^0 = -1$

b) 0x41940000 = 0100 0001 1001 0100 0000 0000 0000 0000

Sign = 0

exp = 10000011 = 131 − 127 = 4

frac = 00101100 = 1/8 + 1/32 + 1 = 1.15625

$= 2^4 \cdot 1.15625 = 18.5$

c) 0xC39D0000 = 1100 0011 1001 1101 0000 0000 0000 0000

S = 1

exp = 1000 0111 = 1/8 + 1/16 + 1/32 + 1/128 + 1

$= -1 \cdot 2^8 \cdot 1.22265 = -314$

6. a) 1.0

Separate:

1 = 0001

0 = 0000

= 0001.0000 = $1.0 \cdot 2^0$

Frac = 127 + 0 = 01111111

= 01111111 000... = 0x3F800000

127/2 = 63	1
63/2 = 31	1
31/2 = 15	1
15/2 = 7	1
7/2 = 3	1
3/2 = 1	1
1/2 = 0	1

b) -8.25

Separate!

8 = 1000 .25 · 2 | .5 | 0

.25 = 01 .5 · 2 | 1 | 1

= 1000.1 = 1.0001 · 2^3

exp: 127 + 3 = 130 = 10000010

= 1100 0001 0000 0000... = 0XC1040000

c) 314.5

= 314 = 100111010 .5 · 2 | 1 | 1

.5 = 01

= 100111010.01 = 1.00111010001 · 2^8

= 127 + 8 = 135 = 10000111

= 0 10000111 00 111 0101000... = 0X434D4000