1) IEEE floating point numbers

a) 16.25 =

0b 1.000001 $\times 2^4$ =

4+127 =

131 =

10000011

0 1000 0011 0000 0100 0000 0000 0000 000

4 1 8 2 0 0 0 0

0x41820000

b) $-8.078125 = -517 \times 2^{-6}$

1_2 121_{10} 517_{10} -

1 011 1001 1000 0000 0100 0000 0000 000

B C C 0 2 0 0 0

BCC02000

---

2) Hexadecimal floating point → Decimal

a) 72407020

= 0 111 0010 0 100 0000 0111 0000 0010 0000

$+(2^{101-127}) \times 1.10000001400000010000$

0b 110 00000 0140 0000 0010 followed by 81 0s.

$\approx 3.812 \times 10^{30}$

b) DFD E4000

= 1 101 1111 1 101 1110 0100 0000 0000

$-(2^{64}) \times 1.1011110010000000000$

$-(1101111\ 00100$ followed by 72 0s)

≈ $-3{,}203 \times 10^{19}$

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	-5	30	-27	7	-26	19	8	-11
0x10010020	-1	9	0	-28	-10	29	-14	12
0x10010040	24	17	-6	-20	-16	20	6	-17
0x10010060	26	-22	-30	-8	16	-9	27	-24
0x10010080	-12	-13	-21	5	21	23	11	22
0x100100a0	-31	15	28	13	-2	10	1	32
0x100100c0	-23	-7	-25	3	14	-18	25	-4
0x100100e0	-3	-19	31	18	4	-29	2	-15

```
Lets Play Bingo! Press Enter to get the next Bingo call
-5
30
-27
7
-26
19
8
-11
-1
9
```

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	21	-31	-11	-22	-21	23	24	8
0x10010020	4	-5	16	9	-23	7	-19	-26
0x10010040	31	-1	-12	13	5	15	-28	-3
0x10010060	27	-13	19	-7	20	-9	14	-6
0x10010080	29	0	-20	3	-14	-30	-2	-15
0x100100a0	22	12	30	32	-16	-10	10	-18
0x100100c0	1	17	2	-17	18	11	-24	-4
0x100100e0	-8	28	-29	25	-27	6	-25	26

```
Lets Play Bingo! Press Enter to get the next Bingo call
21
-31
-11
-22
-21
23
24
8
4
-5
16
```