

Solutions for Homework 2

1. The number 9 can be written as 1.001×2^3 . Adding the bias of 127 to the exponent, we get
0 10000010 0010000000000000000000

In hexadecimal, this is 41100000. Similarly, $5/32$ is 3E200000, $-5/32$ is BE200000, and 6.125 is 40C40000.

2. Writing 42E48000 in binary we get

0 10000101 110010010000000000000000

Subtracting off the bias of 127 from the exponent, we see that the unbiased exponent is 6, so we have 1.11001001×2^6 , which is 114.25.

Similarly, parts (b) through (d) yield 1.0625, 2^{-126} , and $-122,880$, respectively.