

HW #1  
CSc 137, Fall 2020, Harvey  
**Total (12 pts)**

Problems 1.3, 1.4 , 1.5, 1.14 (3 pts each)

Reading assignment: Section 1.1 to 1.4 (all sub-sections).

Advance reading assignment: Section 2.1 through 2.4 (all subsections)

**1.3. What is the 16-bit FP number representation of  $-5.375$  in hex with 1-bit sign, 4-bit biased exponent, and 11-bit fraction, where bias offset = 7?**

**1.4. What is the real number equivalent to FP number  $0x3400$  with 1-bit sign, 4-bit biased exponent, 11-bit fraction, and bias offset = 7?**

**1.5. What is the real number equivalent to FP number  $0x3400$  with 1-bit sign, 4-bit biased exponent, 11-bit fraction, and bias offset = 8?**

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**1.14 What is a Von Neumann architecture bottleneck?**