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CS 273
November 28, 2017

# Homework 12

1. **Describe the representation of IEEE single precision floating point numbers.**

- The single precision floating point numbers are represented by a toal of 32 bits, there is one sign bit a 22-bit mantissa or the actual number followed by an 8-it exponent which allows for a greater range to be represented.

2. **How many different single precision numbers are represented with the IEEE standard?**

- 10^-38 to 10^38 different values

3. **What is the largest single precision number?**

- 3.402823466 * 10^38

4. **What is the smallest single precision number?**

- 0

5. **What single precision numbers have the smallest non-zero absolute value?**

- .0625

6. **Explain why the highest precision occurs around the value of 1 (and -1)?**

- The highest precision values occurs around one because at this point the values on both sides are going to be the closest to each other giving you a bigger range of decimal values that can exist over the small range between 1 and -1.