

CS 51 – Homework #9

1. Convert **0.0625** to IEEE 754 single-precision binary representation

a. Express decimal as a whole number divided by a power of 2: _____

b. Convert to normalized binary scientific notation: _____ x 2^_____

c. S = _____

d. Exponent (in binary) = _____

e. Fraction (in binary) = _____, followed by _____ zeroes

2. Perform the following conversions and operations, expressing all answers in normalized binary scientific notation:

a. $0.875 = \text{_____} \times 2^{\text{_____}}$

b. $0.375 = \text{_____} \times 2^{\text{_____}}$

c. $0.875 - 0.375 = \text{_____} \times 2^{\text{_____}}$

d. $0.875 * 0.375 = \text{_____} \times 2^{\text{_____}}$