1. Using the 4-bit 2's complement floating-point format (4-bit exponent, 4-bit fraction):

   a) What is the largest positive number that can be represented?
   b) What is the largest negative number that can be represented?
   c) What is the smallest fraction that can be represented?

2. Perform the following multiplications using the 4-bit 2's complement floating-point format. Normalize the result and verify your answer in Base 10.

   a) $(3/8 \times 2^3) \times (-1/2 \times 2^{-1}) = ?$
   b) $F_1 = 1.011, E_1 = 0101$
       $F_2 = 1.010, E_2 = 0100$
       $N_1 \times N_2 = ?$

3. Represent the following decimal numbers in the IEEE single precision floating-point format:

   a) 25.25_{10}
   b) -7.5_{10}
   c) -63.125_{10}