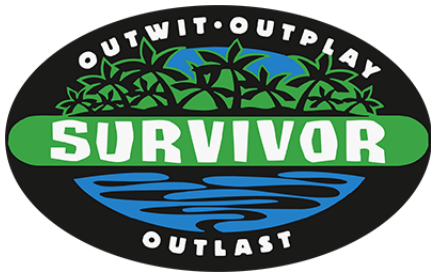

Challenge 4: IEEE-754

Answer the following questions with regard to converting fixed-point numbers to IEEE-754 and converting IEEE-754 to a fixed-point number.
Version 1

1. Convert the fixed point number 14.75 to IEEE754
    a. Express the number in normalized scientific notation binary
    b. Based on part a, What is the unbiased exponent?
    c. Based on part a, What is the biased exponent?
    d. Based on part a, What is the mantissa?
    e. What is this fixed point number as IEEE-754? Give your answer in Hexadecimal

2. Converting IEEE-754 xC0C80000 to a fixed-point number
    a. What is the sign of the encoded number?
    b. What is the biased exponent?
    c. What is the unbiased exponent?
    d. What is the fixed-point number?

Challenge 4: IEEE-754

Answer the following questions with regard to converting fixed-point numbers to IEEE-754 and converting IEEE-754 to a fixed-point number.
Version 2

1. Convert the fixed point number 5.625 to IEEE754
    a. Express the number in normalized scientific notation binary
    b. Based on part a, What is the unbiased exponent?
    c. Based on part a, What is the biased exponent?
    d. Based on part a, What is the mantissa?
    e. What is this fixed point number as IEEE-754? Give your answer in Hexadecimal

2. Converting IEEE-754 xC1100000 to a fixed-point number
    a. What is the sign of the encoded number?
    b. What is the biased exponent?
    c. What is the unbiased exponent?
    d. What is the fixed-point number?

Challenge 4: IEEE-754

Answer the following questions with regard to converting fixed-point numbers to IEEE-754 and converting IEEE-754 to a fixed-point number.
Version 3

1. Convert the fixed point number -3.5 to IEEE754
    a. Express the number in normalized scientific notation binary
    b. Based on part a, What is the unbiased exponent?
    c. Based on part a, What is the biased exponent?
    d. Based on part a, What is the mantissa?
    e. What is this fixed point number as IEEE-754? Give your answer in Hexadecimal

2. Converting IEEE-754 x40940000 to a fixed-point number
    a. What is the sign of the encoded number?
    b. What is the biased exponent?
    c. What is the unbiased exponent?
    d. What is the fixed-point number?

Challenge 4:

Converting DECIMAL -> IEEE BINARY

1. V1
    a. 1.11011×2^3
    b. 3
    c. 130
    d. 11011 (or 110110000000…)
    e. x416C0000
2. V2
    a. 1.01101×2^2
    b. 2
    c. 129
    d. 01101 (or 011010000000...)
    e. x40B40000
3. V3
    a. 1.11×2^1
    b. 1
    c. 128
    d. 11 (or 110000000000…)
    e. xC0600000

Converting IEEE BINARY -> DECIMAL

4. V1
    a. Negative
    b. 129
    c. 2
    d. -6.25
5. V2
    a. Negative
    b. 130
    c. 3
    d. -9.0
6. V3
    a. Positive
    b. 129
    c. 2
    d. 4.625