Tests & Quizzes

Assignment 2

Return to Assessment List

Part 1 of 3 / 4.0 Points

In this question, you are provided with an *unsigned* binary number.

You are asked to *round* this number to 4 binary digits *after* the radix point using various rounding methods.

Your answer *MUST* consist of:

- **4 digits for the fraction part (after rounding),**
- **1 radix point, and**
- **3 digits for the integer part.**

If you have any more or fewer symbols or spaces, you will get *zero* for this question.

Question 1 of 3 4.0 Points

Truncation(100.11011001) = ✔ 100.1101 ;

Rounding-towards-zero(100.11011001) = ✔ 100.1101 ;

Rounding-towards-positive-infinity(100.11011001) = ✔ 100.1110 ;

Rounding-to-nearest(100.11011001) = ✔ 100.1110

Answer Key: 100.1101, 100.1101, 100.1110, 100.1110

Part 2 of 3 / 8.0 Points

In this question, you are provided with a *decimal floating-point number*.

You are asked to encode this value into its *IEEE-754 floating-point representation* in the form of 8 hexadecimal digits.

If rounding is needed, use rounding to the nearest floating-point number.

Do NOT add any spaces or commas to your answer.

Question 2 of 3 8.0 Points

Represent, i.e., encode, 262400.515625 into a 32-bit single-precision IEEE-754 FP value.

If rounding is needed, use rounding to the nearest FP number.

Your answer MUST BE JUST 8 hexadecimal digits.

Write each hexadecimal digit in a field by itself.

0x ✔ 4 ✔ 8 ✔ 8 ✔ 0 ✔ 2 ✔ 0 ✔ 1 ✔ 0

Answer Key: 4, 8, 8, 0, 2, 0, 1, 0

Part 3 of 3 / 8.0 Points

In this question, you are provided with an *IEEE-754 floating-point number* in the form of 8 hexadecimal digits.

You are asked to decode this value into its decimal representation.

Do NOT use scientific notation.

Do NOT round or truncate your answer.

Do NOT add any spaces or commas to your answer.

If the converted number is positive, do NOT add the plus sign.

Your answer will consist of two parts, the integer value and the fraction value.

Do not add any insignificant zeros to your answer.
For the fraction part, you can start it by a decimal point or by a single 0, followed by a decimal point.

Question 3 of 3 8.0 Points

Convert, i.e., decode, 0x48800084 from the 32-bit single-precision IEEE-754 FP representation into decimal representation.

The integer part of the number is: ✔ 262148

The fractional part of the number (including the decimal point) is: ✖ 125

Answer Key: 262148, .125|0.125