Decimal To Floating Point Official

Due May 1 at 11:59pm **Points** 60 **Questions** 3 **Available** Apr 24 at 6pm - May 5 at 11:59pm 11 days
Time Limit None

Instructions

Do the online quiz named **Decimal To Floating Point Practice** first so you can see how each answer is formatted and be sure to follow the format on the Decimal To Floating Point Official online quiz.

Some formatting details:

- certain answers are in binary, others in decimal, and the final answer in hex
- put hex letters in lowercase
- no radix specifiers for any answers
- negative sign for only for negative unbiased exponent.
- trailing zeros are never shown

A IEEE754 converter can be used to check your answers:

https://www.h-schmidt.net/FloatConverter/IEEE754.html (https://www.h-schmidt.net/FloatConverter/IEEE754.html)

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	34 minutes	57.78 out of 60

⚠ Correct answers will be available on May 6 at 12am.

Score for this quiz: **57.78** out of 60
Submitted Apr 24 at 10:16pm
This attempt took 34 minutes.

Question 1 — 20 / 20 pts

Convert 1000.46875 to IEEE 754 FP32

S = 0 (1-bit binary)

Whole Binary Portion = 1111101000

Fractional Binary Portion = 01111

Regular Binary Form = 1111101000.01111

Normalized Binary Form = 1.11110100001111

Unbiased Exponent P = 9 (decimal)

Biased Exponent E = 10001000 (binary)

F field highest bits = 11110100001111

Concatenate fields {S:E:F} and convert to hex to find the FP32 quantity (no radix specifier)

FP32 = 447a1e00

Answer 1:

0

Answer 2:

1111101000

Answer 3:

01111

Answer 4:

1111101000.01111

Answer 5:

1.11110100001111

Answer 6:

9

Answer 7:

10001000

Answer 8:

11110100001111

Answer 9:

447a1e00

Question 2

20 / 20 pts

Convert 0.107421875 to IEEE 754 FP32

S = 0 (1-bit binary)

Whole Binary Portion = 0

Fractional Binary Portion = 000110111

Regular Binary Form = 0.000110111

Normalized Binary Form = 1.10111

Unbiased Exponent P = -4 (decimal)

Biased Exponent E = 01111011 (binary)

F field highest bits = 10111

Concatenate fields {S:E:F} and convert to hex to find the FP32 quantity (no radix specifier)

FP32 = 3ddc0000

Answer 1:

0

Answer 2:

0

Answer 3:

000110111

Answer 4:

0.000110111

Answer 5:

1.10111

Answer 6:

-4

Answer 7:

01111011

Answer 8:

10111

Answer 9:

3ddc0000

Partial

Question 3

17.78 / 20 pts

Convert -9280 to IEEE 754 FP32

S = 1 (1-bit binary)

Whole Binary Portion = 10010001000000

Fractional Binary Portion = 0

Regular Binary Form = 10010001000000

Normalized Binary Form = 1.0010001000000

Unbiased Exponent P = 13 (decimal)

Biased Exponent E = 10001100 (binary)

F field highest bits = 0010001000000

Concatenate fields {S:E:F} and convert to hex to find the FP32 quantity (no radix specifier)

FP32 = c6110000

Answer 1:

1

Answer 2:

10010001000000

Answer 3:

0

Answer 4:

10010001000000

Answer 5:

1.0010001000000

Answer 6:

13

Answer 7:

10001100

Answer 8:

0010001000000

Answer 9:

c6110000

Quiz Score: **57.78** out of 60