Floating Point to Decimal Official

Due Apr 28 at 11:59pm **Points** 60 **Questions** 3 **Available** Apr 24 at 6pm - May 3 at 11:59pm 9 days
Time Limit None

Instructions

Do the online quiz named **Floating Point to Decimal 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 or negative regular decimal quantity
- 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	23 minutes	60 out of 60

⚠ Correct answers will be available on May 4 at 12am.

Score for this quiz: **60** out of 60
Submitted Apr 24 at 11:26pm
This attempt took 23 minutes.

Question 1 — 20 / 20 pts

Convert IEEE 754 FP32 quantity: 4892a180 to decimal.

Convert to binary and parse bits into fields {S:E:F}

S = 0 (1-bit binary)

Biased Exponent E = 10010001 (binary)

F field highest bits = 0010010101000011

Unbiased Exponent P = 18 (decimal)

Normalized Binary Form = 1.0010010101000011

Regular Binary Form = 100100101010000110

Regular Decimal Form = 300300

Answer 1:

0

Answer 2:

10010001

Answer 3:

0010010101000011

Answer 4:

18

Answer 5:

1.0010010101000011

Answer 6:

1001001010100001100

Answer 7:

300300

Question 2

20 / 20 pts

Convert IEEE 754 FP32 quantity: 3f750000 to decimal.

Convert to binary and parse bits into fields {S:E:F}

S = 0 (1-bit binary)

Biased Exponent E = 01111110 (binary)

F field highest bits = 1110101

Unbiased Exponent P = -1 (decimal)

Normalized Binary Form = 1.1110101

Regular Binary Form = 0.11110101

Regular Decimal Form = 0.95703125

Answer 1:

0

Answer 2:

01111110

Answer 3:

1110101

Answer 4:

-1

Answer 5:

1.1110101

Answer 6:

0.11110101

Answer 7:

0.95703125

Question 3

20 / 20 pts

Convert IEEE 754 FP32 quantity: c37ff000 to decimal.

Convert to binary and parse bits into fields {S:E:F}

S = 1 (1-bit binary)

Biased Exponent E = 10000110 (binary)

F field highest bits = 11111111111

Unbiased Exponent P = 7 (decimal)

Normalized Binary Form = 1.11111111111

Regular Binary Form = 11111111.1111

Regular Decimal Form = -255.9375

Answer 1:

1

Answer 2:

10000110

Answer 3:

11111111111

Answer 4:

7

Answer 5:

1.11111111111

Answer 6:

11111111.1111

Answer 7:

-255.9375

Quiz Score: **60** out of 60