

Floating Point Representation Test 1

If the numbers are too large or too small to calculate. Stop at that step.

1. Convert the following binary floating point representation to corresponding decimal value. (Both Mantissa and Exponent are in two's complement form.)

- a) 01010100 00000011
 - b) 01010101 11111101
 - c) 10100000 00000111
 - d) 10100000 11111101
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2. Write these in binary floating-point format using an 10-bit mantissa and 6-bit exponent.

- a) +7.5
 - b) -2.5
 - c) +0.25
 - d) -0.125
 - e) 0.1
 - f) 0.2
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3. Normalize these binary floating-point numbers.

- a) 0.0001101 00000110
 - b) 1.1101000 11110100
 - c) 1.1010101 00000111
 - d) 0.0000001 11111111
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4. In a system that uses 8 bit for mantissa and 8 bit for exponent. Find:

- a) Largest positive number
 - b) Smallest positive number
 - c) Largest magnitude negative number
 - d) Smallest magnitude negative number
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Q) How do you think the number 0 is represented in normalized floating-point format?
