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3/13/17

3.2

What is 5ED4-07A4 when those values represent signed 16-bit hexadecimal numbers stored in sign-magnitude format? The result should be written in hexadecimal.

5ED4
- 07A4
5730_{16}

3.7

Assume 185 and 122 are signed 8-bit decimal integers stored in sign-magnitude format. Calculate 185+122. Is there overflow, underflow, or neither.

185 Since both are signed 8-bit decimal integers, there is no under or overflow.
- 122
63_{10}

3.20

What decimal number does the bit pattern 0x0C000000 represent if it is a two's complement integer? An unsigned integer?

Two's complement and unsigned have the same value of 201,326,592 since the signed bit is 0.

3.21

If the bit pattern 0x0C000000 is placed into the Instruction Register, what MIPS instruction will be executed?

0000 11 00 0000 0000 0000 0000 0000 0000
Operation = jal target = 0

3.23

Write down the binary representation of the decimal number 63.25 assuming the IEEE 754 single precision format.

$253 \times 2^{-2} = 1.1111101 \times 2^{5}$
0 10000100 11111010000000000000000

3.41

Using the IEEE 754 floating point format, write down the bit pattern that would represent -¼. Can you represent -¼ exactly?

-1.00×2^{-2}
1 10000100 10000000000000000000000