Hexadecimal Representation

1/1 point (ungraded)

Please give the 8-bit two's complement representation of the decimal number -56.
Please give your answer in hexadecimal notation (ex: 0xFF).
Note: if you would like to get more practice with this type of problem, you can select the "Reset" button after your first attempt and it will generate a new randomized problem for you.

0x C8 ✔ Answer: C8

Explanation
Since -56 is negative, the easiest way to figure this out is to find the two's complement representation of 56 and then invert the bits and add 1 to find the representation of -56. The two's complement representation of 56 is 0b00111000. Inverting the bits yields 0b11000111 and adding one gives 0b11001000 = -56 = 0xC8.
To convert to hex we break the binary number into two 4-bit chunks which each turn into a hex digit according to their value. For example, 0b0011 = 0×3, 0b0100 = 0×4, ..., 0b1010 = 0xA, 0b1011 = 0xB, ..., 0b1111 = 0xF.

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Answers are displayed within the problem

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