COMP 122/L
Summer 2023

More Number Representation

1.) In decimal, how much is a 4 in position 3 worth? Write out a formula expressing this value.

2.) In binary, how much is a 1 in position 2 worth? Write out a formula expressing this value.

3.) In hexadecimal, how much is a B in position 4 worth? Write out a formula expressing this value.

4.) Convert decimal 56 to hexadecimal. You could either follow the conversion algorithm, or convert to binary, and then convert the binary to hexadecimal.

5.) Convert hexadecimal `0x2AC` to binary. As a hint, using the table will probably be easiest.

6.) Shift `0000 1100` one position to the left, forming an 8-bit result. What effect did this have on the number's value?

7.) Shift `0000 1100` one position to the right, forming an 8-bit result. What effect did this have on the number's value?

8.) What is -4 in a binary two's complement representation? Express your answer in 8-bit binary. Show all steps.

9.) What is -13 in a binary two's complement representation? Express your answer in 8-bit binary. Show all steps.