

Submit a single PDF file online (Canvas) by 10:50 a.m., 2/4 (Thursday).

You must show how you get your answer in each problem. The final answer only will receive no credit.

1. Find the 2's complement of each of the following binary numbers using 8 bits:
i) 1101011 and (ii) 11000.
2. Find the 1's complement of each of the following binary numbers using 8 bits:
i) 1010011 and (ii) 0.
3. Represent each of the following decimal numbers in the 8-bit signed 2's complement number system: (i) 99 and (ii) -88.
4. Calculate $A+B$, $A-B$, $-A+B$, and $-A-B$ for the pair of binary numbers, $A=1010101$ and $B=1010$, using the 2's complement arithmetic with 8 bits. Check your answers by the decimal arithmetic.
5. Show how a 16-bit computer using the 2's complement arithmetic would perform the following computations: (i) $16850-2925$ and (ii) $-2925-16850$ where both 16850 and 2925 are decimal numbers.