CMPS-2240 Written Quiz-1   name _____

8 questions. Worth 8-points.

Write clearly with a pencil. Circle your answers please.
Fit your answers on 1 sheet of paper please. Showing some work is good.

When finished, take a picture of the paper with a phone, scanner, or camera.
Save the picture file on Odin as **2240/1/quiz1.jpg**

Look at the filename carefully. There is no w. Don't overwrite your other quiz.

If you print this quiz out, and get multiple pages, take one picture only of the
pages. Put them close together.

1. You are given an unsigned byte of memory with the bit pattern: 11111111
   What decimal value will the byte contain after the following three operations
   have completed? There is only one answer.

        bit-shift right 2
        bit-shift left 4
        bit-shift right 2

2. You are given an unsigned byte of memory with the bit pattern: 00000001
   What decimal value will the byte contain after the following four operations
   have completed? There is only one answer.

        bit-shift left 2
        add 1
        bit-shift left 2
        add 1

3. Start with the final value of the byte value from question 2 above.
   What value will be produced by the following operation?
   Note: the operation is shown in C language code.

        byte & 0xC

4. What is the sum of the three binary numbers below? Show your answer in binary.

        10110110
        00111011
        11100011
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5. Show your answer for question #4 above, as octal and hexadecimal values.
   Use octal and hexadecimal notation. Do not use the words octal or hexadecimal in
   your answer. This question has two answers.

6. What does the following MIPS instruction do?   **li $v0, 10**

        A. stores the value 10 in a variable named li
        B. creates a variable named v0
        C. stores a value into a register
        D. reads a value from a register

7. Here is a signed bit pattern in two's compliment format: 11100000
   The processor will see this as a negative value.
   What is the decimal value of this signed byte?
   hint: doing the 2's compliment twice returns a number to its original value.

8. Which bit of a binary number can be used to determine if the value
   is even or odd?

       A. any even numbered bit
       B. a bit that is set to 1 when shifted left
       C. the most significant bit
       D. the least significant bit