CS-301 Computer Architecture
Assignment 3

Name:_____

1. Perform the following binary multiplications, assuming unsigned integers:
   a. 10101×101

   _____

   b. 11010×1011

   _____

2. Perform the following binary divisions, assuming unsigned integers:
   a. $10000001 \div 101$

   _____

   b. $1001010010 \div 1011$

   _____

3. Give two unsigned integers that would produce an overflow when their 8-bit representations are added. Add the two numbers to verify the overflow. Show your work.

   _____

   _____

   _____

   _____

4. Represent the decimal numbers 119 and -107 in binary using 8-bit signed magnitude, one's complement, and two's complement.

	119	**−107**
Signed Magnitude		
One's Complement		
Two's Complement		

5. Convert the one's complement binary numbers 01011010 and 11111110 to decimal.

	01011010	01011010
Decimal Value		

6. Convert the two's complement binary numbers 01011010 and 11111110 to decimal.

	01011010	01011010
Decimal Value		

7. Add the following one's complement binary numbers and express the answer in decimal.
   a. $01 + 1011$
   b. $11 + 01010101$

	$01 + 1011$	$11 + 01010101$
Sum in One's Complement		
Sum in Decimal		

8. Add the following two's complement binary numbers and express the answer in decimal.
   a. $01 + 1011$
   b. $11 + 01010101$

	$01 + 1011$	$11 + 01010101$
Sum in Two's Complement		
Sum in Decimal		