Binary Arithmetic  
CS2/AP/IBSL/IBHL1

**Directions**: Add the following binary numbers.

1. 00010111 2. 10100110

01110110 10110100

Directions: Convert the following decimal numbers to binary then add them together.

1. 28 4. 115

+ 39 + 99

**Directions**: Convert the following decimal numbers into a 2's complement negative number.

1. -18 6. -51

**Directions**: Convert the following decimal numbers to binary then subtract them using 2's complement.

1. 31 8. 55  
   - 14 - 77

**Directions**: Assume you are using a 1 byte system and numbers can only be stored in a single byte. Also assume that the most significant digit of a number is its sign bit. Add the following binary numbers together. Then convert the resulting binary number into a decimal number.

1. 01111111 2. 11111111

+ 01000111 + 11111111

Question: Which of the two problems produced a correct answer? (1, 2, both, neither) Why?