Name: _____

Twos Complement Worksheet

1. What is the standard range of numbers that can be represented by an 8-bit *signed* binary number?
   _____

2. How many bits do you need to represent -33 using two's complement?

3. Write -1 through -9 in twos complement:

   -1: _____
   -2: _____
   -3: _____
   -4: _____
   -5: _____
   -6: _____
   -7: _____
   -8: _____
   -9: _____

4. Write each number as a seven-bit twos complement binary number. Work each problem by hand (no calculators or conversion problems). Show your work.

   (a) -19

   (b) -12

   (c) -17

   (d) -31

   (e) -48

   (f) -51

5. Convert each six-bit twos complement binary number to base 10.

   (a) `111011`

   (b) `100010`

   (c) `000010`

   (d) `111000`