Name: **Date:** **Grade:**

Integers and Bases Worksheet

Unsigned Binary

Convert each of these decimal numbers to 8-bit binary

54_{10}

0_{10}

237_{10}

255_{10}

Convert each of these binary numbers to unsigned decimal

$1001\ 0011_2$

$0101\ 1100_2$

$1111\ 0110_2$

$0010\ 0001_2$

Signed Magnitude Binary

Convert each of these decimal numbers to 8-bit signed magnitude binary

-13_{10}

127_{10}

-127_{10}

-100_{10}

Hexadecimal

Convert each of these binary numbers into hexadecimal

$1100\ 1001_2$

$1111\ 1111_2$

$0001\ 1011_2$

$1010\ 0001_2$

Convert each of these hexadecimal numbers into binary

0x001125BC

0x5401DE5B

0x491BFC24

0xDEADBEEF

Ones' Complement

Write the following in in 8-bit ones' complement representation

73_{10}

-0_{10}

-10_{10}

-124_{10}

Add the following 8-bit one's complement numbers

$-12_{10} + 17_{10}$

$-24_{10} + 7_{10}$

Twos' Complement

Write the following in 8-bit twos' complement representation

48_{10}

-54_{10}

-100_{10}

-127_{10}

Add the following 8-bit twos' complement numbers

$54_{10} + -32_{10}$

$100_{10} - 86_{10}$