

### ICA3

1. A. 2 base 10  $\rightarrow$  sign-and-magnitude format (16 bits)

2  $\rightarrow$  0010 positive  $\rightarrow$  0

0000 0000 0000 0010

B. 2 base 10  $\rightarrow$  2's comp format (16 bits)

0000 0000 000 0010

2. A. -2 base 10  $\rightarrow$  sign-and-magnitude (16 bits)

1000 0000 0000 0010

B. -2 base 10  $\rightarrow$  2's comp (16 Bits)

(negative) 1111 1111 1111 1110

3. -128 base 10  $\rightarrow$  2's comp. (16 Bits)

1111 1111 1 000 0000  
negative 128 64 32 16 8 4 2 1

4. -3.5 base 10  $\rightarrow$  binary (8 bits)

-0011 . 1000

5/2 2 1  
2/2 1 0

5. -3.5 in floating-point representation

1. 1  $\rightarrow$  negative

3. 1100 000000 000000000000

2.  $-11.1 \times 2^0$

$-1.11 \times 2^1$

4. Exponent  $\rightarrow$  0100 . 000