

## Encoding 2 page 2

$9107 \rightarrow \text{negative}$   
 $+ E311 \rightarrow \text{negative}$   
 $\equiv 7418 \rightarrow \text{positive}$   
 modular  
 carry = y, overflow = y,  
 saturated = 8000

$0037 \rightarrow \text{positive}$   
 $+ 030C \rightarrow \text{positive}$   
 $\equiv 0343 \rightarrow \text{positive}$   
 modular  
 carry = n, overflow = n,  
 saturated = 0343

$7FC0 \rightarrow \text{positive}$   
 $+ 0049 \rightarrow \text{positive}$   
 $\equiv 8009 \rightarrow \text{negative}$   
 modular  
 carry = n, overflow = y,  
 saturated = 7FFF

## IEEE 754 single precision

hex 43 D8 00 00  $\rightarrow$  binary 0100 0011 1101 1000 0000 0000 0000 0000

s = 0

regroup 0 1000 0111 101 1000 0000 0000 0000 0000

e = 87 = 135  
hex decimal

expression =  $1.1011 \times 2^{135-127}$

=  $1.1011 \times 2^8 \rightarrow \text{binary scientific}$

decimal = ~~1.10110000~~  $1.10110000 = 1.10110000 = 1, 3, 6, 13, 27, 54, 108,$   
 $216, 432$

binary scientific  $-1.01 \times 2^{86}$  s = 1,  $86 = e - 127,$   
 f (w/ 21 zeroes)  $e = 213 = D5 \text{ hex}$

hex 1 1101 010 010 0000 0000 0000 0000 0000

= E A A 0 00 00  $\rightarrow$  EA A0 00 00