hw1

1.2
No,it can’t.

1.4
ambiguity(uncertainty).

1.10

1. definiteness: each step is precisely stated.
2. effective computability: each step can be carried out by a computer.
3. finiteness: the procedure terminates.

1.16
operation, operand, data types, addressing modes.

1.18
A single microarchitecture implements one ISA.
Many microarchitecture could exist for a single ISA.

2.4
2^n integers, 0 ~ 2^n-1.

2.8
a. 01111111 in binary, and 127 in decimal.
b. 10000000 in binary, and -128 in decimal.
c. 2^{n-1}-1.
d. -2^{n-1}.

2.17
a. $1100_{(B)}$, $-4_{(D)}$
b. $01010100_{(B)}$, $84_{(D)}$
c. $0011_{(B)}$, $3_{(D)}$
d. $11_{(B)}$, $-1_{(D)}$

2.20
operations (b) and (c) generate overflow.
a. -4 + 3 = -1
b. -4 + 4 = 0
c. 7 + 1 = 8 overflow
d. -8 - 1 = -8 + (-1) =/= 7 overflow
e. 7 + (-7) = 0

2.34
a. 0111
b. 0111
c. 1101
d. 0110