1.13 Both computers can solve the same problems. As computer B can perform subtraction by taking the negative of the second number and adding it to the first one.

1.15 advantage: Higher-level language are usually easier for programmer to read and know what is going on.

Disadvantage: Higher-level language is not as efficient as lower-level language.

1.16 the number of (1)operations, (2)data types and (3) addressing modes.

1.17 An ISA describes the interface to the computer from the perspective of the 0s and 1s of programs. It doesn’t specify the actual physical implementation. However, the microarchitecture does that.

1.18 Only one ISA can be implemented by a single microarchitecture. But many microarchitectures can exist for a single ISA.

2.10

A. -6

B. 90

C.-2

D.14803

2.11

a.01100110

b.01000000

c.00100001

d.10000000

e.01111111

2.13

a.11111010

b.00011001

c.11111000

d.00000001

2.14

a.1100

b.1010

c.1111

d.1011

e.0000

2.17

a.1100 -4

b.01010100 84

c.0011 3

d.11 -1

2.22

0111 1111 1111 1111

0000 0000 0000 0001

2.24

1111 1111 1111 1111

0000 0000 0000 0001

2.27 Yes. Overflow has occurred that adding 2 positive numbers has resulted in a negative number.