Solution for section 2.2, B17:
Reading off the Braille numerals for a. we get 124,797 and for b. we get 8,724,640,224

Solution for section 2.3, B7ab:
With bundle sticks:
(a) 3 bundles of ten, 8 units.
(b) 5 bundles of ten, 2 units.

With a chip abacus:
(a) 3 bundles of ten, 8 units.
(b) 5 bundles of ten, 2 units.

With multibase pieces:
(a) 3 longs, 8 units
(b) 5 (base six) longs, 2 units

Solution for section 2.3, B12:
Since there are 26 letters in the alphabet, we have 26 numerals that correspond to a base 26 number system. The letter z represents the number 25, and so zz = z × 26^1 + z × 1 = 25 × 26 + 25 × 1 = 675.

Solution for section 2.3, B13:
(a) 342_{five} = 3 \times 5^2 + 4 \times 5^1 + 2 \times 1 = 75 + 20 + 2 = 97.
(b) TEl_{twelve} = T \times 12^2 + E \times 12^1 + 0 \times 1 = 10 \cdot 144 + 11 \cdot 12 + 0 = 1572.
(c) 101101_{two} = 1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 1 = 32 + 8 + 4 + 1 = 45.

Solution for section 2.3, B14:
(a) 142 = 11 \times 12^1 + 10 \times 1 = ET_{twelve}
(b) 72 = 1 \times 2^6 + 1 \times 2^3 = 1001000_{two}
(c) 231 = 3 \times 8^2 + 4 \times 8^1 + 7 \times 1 = 347_{eight}

Solution for section 2.3, B16:
(a) 213_{sixteen} = 2 \times 16^2 + 1 \times 16^1 + 3 \times 1 = 531
(b) A_{sixteen} = A \times 16^1 + 4 \times 1 = 10 \times 16^1 + 4 \times 1 = 164
(c) 1C2_{sixteen} = 1 \times 16^3 + C \times 16^2 + 2 \times 16^1 + B \times 1 = 1 \times 16^3 + 12 \times 16^2 + 2 \times 16 + 11 \times 1 = 7211
(d) 420_{sixteen} = 4 \times 16^3 + 2 \times 16^2 + 0 \times 16^1 + E \times 1 = 4 \times 16^3 + 2 \times 16^2 + 0 \times 16^1 + 14 \times 1 = 16,410

Solution for section 2.3, B17:
It’s helpful to keep in mind the powers of 16 for this problem, that is, 16^2 = 256, 16^3 = 4096, 16^4 = 65,536. To start this problem you need to find the largest power of 16 that divides into the number your trying to convert to base 16.
(a) 375 = 1 \times 16^2 + 7 \times 16^1 + 7 \times 1 = 177_{sixteen}
(b) 2941 = 11 \times 16^2 + 7 \times 16^1 + 13 \times 1 = B \times 16^2 + 7 \times 16^1 + D \times 1 = B7D_{sixteen}
(c) 9520 = 2 \times 16^3 + 5 \times 16^2 + 3 \times 16^1 + 0 \times 1 = 2530_{sixteen}
(d) 24,274 = 5 \times 16^3 + 14 \times 16^2 + 13 \times 16^1 + 2 \times 1 = 5 \times 16^3 + E \times 16^2 + D \times 16^1 + 2 \times 1 = 5ED_{sixteen}