Page 4-12 Line 3, it should be $\sum_{i=0}^{\lg n-1} \frac{n}{\lg n - i} = \sum_{i=1}^{\lg n} \frac{n}{i}$.

Page 4-14, 4-15 In solution to Problem 4-4 h, in the proof of $T(n) = \Omega(n \lg n)$, the exact form of the inductive hypothesis $T(n) > cn \lg n + dn$ has not been proved. The same mistake occurs in i on page 4-15.

Page 8-15 Line 19 of Problem 8-3 a, change "To sort the group with m_i digits" to "To sort the group with i digits".

Page 8-16 Line 12, change "... less **that** the first letter of string y" to "... less **than** the first letter of string y".

Page 9-14

1. In solution to Problem 9-1 ***b***, O-notation is introduced to prove the Ω-notation of the best asymptotic worst-case running time. This is not rigorous.

   Actually, the worst-case running time of i extractions from a heap with n elements is $\Omega(\lg n) + \Omega(\lg(n-1)) + \cdots + \Omega(\lg(n-i+1)) = \Omega(\lg(n!/(n-i)!))$, which can not be simplified to $\Omega(i \lg n)$. Thus, total worst-case running time is $\Omega(n + i \lg(n!/(n-i)!))$.

2. Solution to Problem 9-2 ***a*** is not rigorous either. According to the definition, x is the weighted median only if $\sum_{x_i<x} w_i < 1/2$, but not $\sum_{x_i<x} w_i \le 1/2$. Therefore, the first part of the proof should be changed to

$$\begin{aligned}
\sum_{x_i<x} w_i &= \sum_{x_i<x} \frac{1}{n} \\
&= \frac{1}{n} \cdot \sum_{x_i<x} 1 \\
&= \frac{1}{n} \cdot |\{x_i : 1 \le i \le n \text{ and } x_i < x\}| \\
&= \frac{1}{n} \cdot \left(\left\lfloor \frac{n+1}{2} \right\rfloor - 1 \right) \\
&\le \frac{1}{n} \cdot \left(\frac{n+1}{2} - 1 \right) \\
&= \frac{1}{n} \cdot \left(\frac{n}{2} - \frac{1}{2} \right) \\
&= \frac{1}{2} - \frac{1}{2n} \\
&< \frac{1}{2}.
\end{aligned}$$

Page 9-18 Line 12 of solution to Problem 9-3 ***a***, change "In the initial call, $p = 1$" to "In the initial call, $p = 0$".

Page 12-14 The solution to Exercise 12.4-1 is actually the solution to Exercise 12.4-2.

Page 13-16 Problem 13-1 ***a***, in either case when deleting a node, since y is spliced out, all ancestors of y must be changed.

Page 14-12 Exercise 14.2-2, in case 2 of RB-DELETE-FIXUP, we should add $bh[p[x]] \leftarrow bh[x] + 1$ or $bh[p[x]] \leftarrow bh[w]$ after line 10 in RB-DELETE-FIXUP.

Page 14-17 In the first version of JOSEPHUS(n, m), the loop condition of the **while** loop should be **while** $k > 1$.

Page 16-15 Line 8, change "so that X consists of elements in B but not in A' or A" to "so that X consists of element in B' but not in A' or A".

Page 16-15 The last paragraph is not correct. It is not guaranteed that there are sufficient y in $B - A'$ to be added to $A - B'$ so that $|C| = |A|$. As a counter-example, let (S, l) be a graphic matroid in which S is a set of edges of a complete graph having four vertices a, b, c and d. Suppose that $A = \{ab, bc, cd\}, A' = \{ac\}, B = \{ad, ac, bd\}$ and $B' = \{bc, cd\}$. Following the proof in the manual, we will have $X = B' - A - A' = \emptyset, B - A' = \{ad, bd\}$ and $A - B' = \{ab\}$. Adding either of the two elements in $B - A'$ to $A - B'$ yields a new set belonging to l, however, that new set is not a maximal independent set in l. But adding both the two elements in $B - A'$ to $A - B'$ will result in a cycle, that is, the resulted new set does not belong to l. Therefore, the proof for the exchange property of (S, l') may not be correct.

The solution is to change this paragraph and the first paragraph on page 16-16 to the two paragraphs below:

Applying the exchange property, we add such y in $B - A'$ to $A - B'$, maintaining that the set we get, say C, is in l. Then we keep applying the exchange property, adding a new element in $A - C$ to C, maintaining that C is in l, until $|C| = |A|$. Once $|C| = |A|$, there is some element $x \in A$ that we have not added into C. We know this because the element y that we first added into C was not in A, and so some element x in A must be left over. Also, $x \in B'$ because all the elements in $A - B'$ are initially in C. Therefore $x \in B' - A'$.

The set C is maximal, because it has the same cardinality as A, which is maximal, and $C \in l$. All the elements but one in C are also in A, while the exception is in $B - A'$, so C contains no elements in A'. Because we never added x to C, we have that $C \subseteq S - A' - \{x\} = S - (A' \cup \{x\})$. Therefore, $A' \cup \{x\} \in l'$, which is what we needed to show.

Page 22-23 In the fourth last line of the second paragraph, $x \in V'' \cup V_C$ should be changed to $x \in V'' \cap V_C$.