Chapter 6

1. Page 154

   In the paragraph just before section 6.3, it is said that

   the integers involved in a problem are often only poly large in n"

   but in that case is not a pseudo polynomial algorithm strongly polynomial? If that is the case, then what is the motivation of studying strong vs weak NP hardness?

2. Page 154

   In Notation 6.3, I think the notation that you want to use, for instance in describing the partition and subset sum problems, is $\sum_{a \in A}$ instead of $\sum_{i=1}^{n} a_i$.

3. Page 156 Exercise 6.8, Item 3: Should it be

   $7t/24 < a_i < 10t/24$ instead of $7/24 < a_i < 10/24$?

   Similarly, should it be

   $(\frac{1}{3} - \delta)t < a_i < (\frac{1}{3} + \delta)t$ instead of

   $\frac{1}{3} - \delta < a_i < \frac{1}{3} + \delta$?

4. Page 163 In the last paragraph of the page, it says that

   "we can assume that they all have a side on the left boundary of the first mini-rectangle".

   I am not sure if this assumption can be made since it is possible for two (very small) squares on top of each other and the rest of the left side of the first mini-rectangle can be covered by a (very large) square. In that case, only $a_1 + a_3 = t$ instead of $a_1 + a_2 + a_3 = t$. How is this problem rectified?

5. Page 164 In the first paragraph, it is rightly pointed out that a mini-ractangle may contain a part of a fourth rectangle. However, there is a general problem here which is not identified: a mini-rectangle may contain, for instance, 1 full square and parts of 5 different squares. In this case, it is not clear for which three of the a_i's, the sum will be t.

6. Page 167

   Proof of Theorem 6.24: In the Step 1 of the reduction, it says that $t = \sum_{i=1}^{n} a_i$. Should it not be $t = (\sum_{i=1}^{n} a_i)/(n/3)$ instead?

7. Proof of Theorem 6.24: In the Step 3 of the reduction, it says that

   empty rectangle of height $n/3$ and height $t/(n/3)$.

   Should it not be

   empty rectangle of height $n/3$ and width t?

8. Page 172 On the second to last line of the page, I think it should be $\Theta(L)$ instead of $\Theta(l)$.