## Chapter 1

1. Page 44

   Notation 1.2: Should it be

   "given a formula of the form X"

   instead of

   "given a formula of the form XSAT"?

2. Page 46

   GAP 3SAT-5: Should it be

   "at most $(1 - \epsilon)$ fraction of its clauses"

   instead of

   "at most $(1 - epsilon)$ of its clauses"?

3. Page 47

   After Definition 1.14: Should it be

   "number of TRUE literals per clause"

   rather than

   "number of literals per clause"?

4. It is said that "we give the only example that we will be using" but where is that example?

5. Page 49

   Proof theorem 1.21: In the point 1 of construction of phi', should it be

   "E=T or F or F"

   instead of

   "E=TRUE or FALSE or FALSE"?

6. Page 52

   Example 1.27. 2.: I think that the second part says that if there is an edge from $x_i$ to $x_j$ for $i < j$, then there is an edge from $x_j$ to $x_i$. But this means that $E(x_j, x_i)$ could be true without $E(x_i, x_j)$ being true. In order to have symmetricity, should not the AND be over all $i, j$ such that

   $1 \leq i, j \leq 6$ instead of

   $1 \leq i < j \leq 6$?

7. Also, there is a typo in this condition. It says that

   $1 \leq i < j << 6$ instead of

   $1 \leq < j \leq 6$.

8. In the third part, there is a typo in the condition of AND: I think it should be

   $1 \le i < j < k \le 6$ instead of

   $1 \le i < jk <<= 6$.

9. There is a typo in Example 1.28 1.: I think it should be $TRI(x_1, x_2, x_3) = E(x_1, x_2)$ AND $E(x_2, x_3)$ AND $E(x_3, x_1)$ instead of

   $TRI(x_1, x_2, x_3) = E(x_1, x_2)$ AND $E(x_2, x_3)$ AND $E(x_2, x_1)$.

10. I think the condition on AND at the bottom of the page should be

    $1 \le i \le j \le 5$ instead of $1 \le i \le j \le 4$.

11. There is another typo in the last equation of this page: It should be

    $SQUARE(x_1, x_2, x_3, x_4)$ instead of $SQUARE(x_1, x_2, 3, x_4)$.

12. Page 54

    Proof of Theorem 1.30: In the reduction, no gadget is described for using NOT $x$ for some variable $x$. That is, do we not need to show how the literals $x$ and NOT $x$ are guaranteed to be colored differently in $G$?

13. Page 57

    In the definition of CRYPTARITHMS, it says that

    there is an injection of $\Sigma$ into $\{0, ..., B - 1\}$.

    But since $|\Sigma| = |\{0, ..., B - 1\}| = B$, it is not actually a bijection? Also, in the first bullet of point 2 on page 59, it says that

    $B$ will be large enough so that many numbers will not be used.

    But if the above mapping is actually a bijection, then how is it possible for any number to be not used? I think the definition of CRYPTARITHMS needs to be changed here.

14. Page 59 Proof of Theorem 1.32: In point 1, the case of $v_i$ is TRUE is considered but not the case of $v_i$ being FALSE.