Errata for Geometric Approximation Algorithms

By Sariel Har-Peled, February 25, 2014[1]

Version: 1.0

1. Chapter 1:
   - Page 2, Lemma 1.5: "...$\alpha = \mathcal{CP}(\mathsf{P})$..."
   - Page 2, Proof of Lemma 1.5: "Partition □..."
   - Page 11, Exercise 1.1 (Tamon Stephen): The lower bound seems incorrect. One can prove 2^{d} easily, and $\left(\sqrt{\mathsf{d}}/5\right)^{\mathsf{d}}$ is also correct for d large enough – using the formula for the volume of the ball in higher dimensions (see Section 19.2.1, page 261), and Stirling's formula.
2. Chapter 2:
   - Exercise 2.3 (Lie Yan): The condition $n \leq r^{2-\varepsilon}$ is missing, where $\varepsilon > 0$ is an arbitrary small constant. Also the point set is, say, in the plane.
3. Chapter 6:
   - Page 91 (Tamon Stephen): Theorem 6.7 should be:
     "Given a set P of n points in $\mathbb{R}^d$, one can compute a spanning tree $\mathcal{T}$ of P such that **any hyperplane** crosses at most $O(n^{1-1/d})$ edges of $\mathcal{T}$. The running time is polynomial in n."
4. Chapter 10:
   - Page 146 (Tamon Stephen): The figure is for $\varepsilon = 0.25$ (and not as written in the text), and as such $\mathsf{q} = \rho_z(75)$.
5. Chapter 11:
   - Page 158, Section 11.3 (Tamon Stephen): $1 + \varepsilon$ should be τ.
6. Chapter 16:
   - (Tamon Stephen): **Farkas** lemma not Farakas lemma. Several places in this chapter.
7. Chapter 17:
   - Page 233, bottom line (Tamon Stephen): Figure 17.2 (and not 17.1).
8. Chapter 23:
   - Lemma 23.3 (Lie Yan): Part (B) should be that the resulting coreset is a 2ε-coreset (the ε-coreset claim is still true under a slightly different definition of projection width).