Problem 2 (due Monday, February 17)

Let $d(n)$ be the smallest number such that among any $d(n)$ points inside a regular n-gon with side of length 1 there are two points whose distance from each other is at most 1. Prove that

(a) $d(n)=n$ for $4\leq n\leq 6$.

(b) $\displaystyle \lim_{n\to \infty} \frac{d(n)}{n}=\infty $.

For a complete solution see the following link Solution.