Sensitivity Conjecture

Theorem 1 (Not the Sensitivity Conjecture itself, but equivalent)**.** *Any set H of $2^{n-1}+1$ vertices of the n-cube contains a vertex with at least $\sqrt{n}$ neighbors in H.*

The proof can be found here: `https://www.cs.stanford.edu/~knuth/papers/huang.pdf`. I suggest you to read the Knuth's version, because I can't make it shorter or simpler. As I remember, there was some hard equation in the end, but can be easily proven if we change it to ... $\leq$ ... inequality. The original equality is also true (we don't need its full strength), but it uses some observations about eigenvalues of the matrix A, which can be found in the original paper.

Connection to Boolean functions

Many definitions, no proofs, to be added later.