The Lovász number of a graph $\vartheta(G)$ is a widely studied invariant that has a variety of different characterizations. The most relevant property of the Lovász number is that it can be computed efficiently even though it lies sandwiched between other classical graph invariants whose computation is NP-hard.

We will present a survey of the characterizations and properties of the Lovász number, as well as give a proof that the Shannon capacity of the pentagon is $\sqrt{5}$, a beautiful result that is considered to be one of the “proofs from the book.”