The theory of optimal stopping is the crucial tool in, e.g.,

- sequential statistical testing of hypotheses,

- pricing of American options.

This survey talk is on methods for solving infinite horizon optimal stopping problems for continuous time strong Markov processes. Given a non-negative smooth reward function G the problem is to find a stopping time τ^* such that

$$\sup_{\tau \in \mathcal{M}} \mathbb{E}_x \left(G(X_\tau) \right) = \mathbb{E}_x \left(G(X_{\tau^*}) \right),$$

where X is the underlying process and $\mathcal{M}$ is the set of all stopping times in the natural filtration of X. We focus on verification theorems obtained by

- principle of smooth pasting,

- Riesz representation for excessive functions,

- representing excessive functions as expected suprema.

Some examples are presented, in particular, for Lévy processes.
The talk is concluded with a short discussion on the historical development of the theory of optimal stopping.