A stopping problem

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Abstract

There are many problems in mathematics, as in real life, which involve knowing when to stop. In this talk we consider the following situation. You are presented with N envelopes, each containing a piece of paper on which is written a distinct real number. Your task is to try to locate maximum of all of these numbers. You may examine each envelope in turn, observe its number, and stop at any time that you think you may have located the maximum. However, you cannot go back. Once you bypass an envelope, it can no longer be selected. Our problem is to determine, for each N, the optimal strategy for stopping and the resulting probability of success. Moreover, we want to investigate the limiting behavior as N approaches infinity.