Let \( n \) be a natural variable. It is easy to prove
\[
n' = 1 \iff \begin{cases} 
\text{if } n = 1 \text{ then } \text{ok} \\
\text{else if even } n \text{ then } n := n/2. \ n' = 1 \\
\text{else } n := 3n + 1. \ n' = 1 
\end{cases}
\]
The problem is to find the execution time. Warning: this problem has never been solved.

§ see book Section 4.2