Let $\text{truer}$ be a bunch of strings of binary values defined by the construction and induction axioms

$T, \bot; \text{truer}; \text{truer}: \text{truer}$

$T, \bot; B; B: B \Rightarrow \text{truer}: B$

Given a string of binary values, write a program to determine if the string is in $\text{truer}$.