MA-236: Homework 11

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I pledge my honor that I have abided by the Stevens Honor System.

"Prove that $ss0$ is not equal to $sss0$ in Robinson arithmetic."

Pruned Tree where $Q_1 ... Q_7$ are the axioms of Robinson's arithmetic:

1. $ss0 = sss0$ $\neg$Conclusion
2. $0 \neq s0$ Q_2
3. $s0 \neq ss0$ Q_1,2
4. $ss0 \neq sss0$ Q_1,3

$\times$

Since the pruned refutation tree closes, the sentences are **inconsistent**. Therefore, the argument is **valid**.