

TLCA List of Open Problems

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Problem # 25

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Statement. How many fixed points can a combinator have?

Problem Origin. First posed in [Intrigila and Biasone, 2000].

The question is how many fixed points can a combinator (*i.e.* a closed term) have in the $\lambda\beta$ -calculus. In [Intrigila and Biasone, 2000] it is proved that, if a combinator has a fixed point in normal form then, it has either an infinite number of fixed points or exactly one fixed point.

References

[Intrigila and Biasone, 2000] Intrigila, B. and Biasone, E. (2000). On the number of fixed points of a combinator in lambda calculus. *Mathematical Structures in Computer Science*, 10(5):595–615.