

(Automation) How many connected components in the preimage of an interval?

Of course, motivating the steps above so an algorithm can work through the proof using a point-and-click system is the next step.

I have a few thoughts on how to automate certain parts.

- Automate each "fail" after the algorithm fails to come up with a solution after a certain number of steps.
- Automate each "prove the opposite" after each "fail"
- Automate each "specialize" when the search space for an existential is bigger than a certain threshold (e.g. exponential)
- Automate each "guess" when the number of "standard" functions to guess from falls below a certain number (e.g. once the number of satisfying "standard" functions is < 10).
- Automate each "generalize" once a specialize has been successfully completed.
- Automate each "unfold" if a new variable in the context has a syntactic match to a different definition of an existing variable.