Invariant Generation.

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Progress

- Ran code for octagonal domain extended for 1 variable example for 10*10 grid. Variation of this mesh wrt μ_K also noted.
- Ran code for all domains for $(D, C) = (3, 3)$ for 3 variable example - never converges.
- Extension of Code to allow for integer tuples?
- Theoretical Calculation of guessing an invariant for randomized guessing.

Extension of Code to allow for integer tuples?

This allows us to encode non-linearity in a variable whose value is not changed by the loop.
So instead of our domain being $\mathbb{Z}$, we let it be any one of the values: $a_0 + a_1 t + a_2 t^2 + \ldots$. To extend to allow for r variables, we only need to define an order on the terms - which should preferably put smallest terms first - we choose length-lexicographic order.

Q: Is it worthwhile extending the code for this, or should we extend for different clause systems first?

Theoretical Calculation of Guessing Invariant

Let given be DNF have the form $S = c_1 \vee c_2 \ldots c_d$ with d disjuncts, and let maximum conjuncts and disjuncts be C and D respectively. Then:

$$P(S) = \frac{1}{DC^d(D_1^n D_2 D_3)^{\sum_i c_i}}$$