

## CoCoA-5 - Slug #1578

### SLUG: RationalSolve slow and stupid

22 Feb 2021 15:22 - John Abbott

<b>Status:</b>	New	<b>Start date:</b>	22 Feb 2021
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>		<b>% Done:</b>	0%
<b>Category:</b>	enhancing/improving	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	CoCoA-5.4.4	<b>Spent time:</b>	0.30 hour

#### Description

The following system can easily be solved by hand, but CoCoA is very slow

```
[x*y +y^2, x^2 -z^2, y^3 -y*z^2, z^2021 -1]
```

The problem seems to be computing the minpoly of x, but it would better to start with z since we already have a univariate poly in z.

#### History

#1 - 23 Feb 2021 10:39 - John Abbott

- Description updated

Some ideas:

- if there is a univariate poly, factorize it, and take just the univariate factors; use these to elim an indet.
- if there is a subset of K polys involving just K indets, and these polys define a 0-dim system, then perhaps solve that sub-problem first?

Requires revising RationalSolve.cpkg5; or maybe port everything into C++?

#2 - 15 Jan 2024 19:27 - John Abbott

- Target version changed from CoCoA-5.4.2 to CoCoA-5.4.4