CoCoALib - Slug #1769

FixedDivisor is sometimes surprisingly slow

20 Nov 2023 22:12 - John Abbott

Status:	Closed	**Start date:**	20 Nov 2023
Priority:	Normal	**Due date:**	
Assignee:	John Abbott	**% Done:**	100%
Category:	Improving	**Estimated time:**	2.22 hours
Target version:	CoCoALib-0.99850	**Spent time:**	2.25 hours

Description

FixedDivisor can sometimes be unexpectedly slow.

```
f := product([c[1]*x-c[2] | c in (1..50)><(1..50) and gcd(c) = 1]);
FixedDivisor(f); -- a bit slow; much worse with 100 instead of 50
```

Maybe make the evaluation code in SparsePolyOps-cyclotomic.C publicly available & use it?

Related issues:

Related to CoCoALib - Feature #1770: Evaluate polynomial function/class	**Closed**	**21 Nov 2023**

History

#1 - 21 Nov 2023 23:15 - John Abbott

- Related to Feature #1770: Evaluate polynomial function/class added

#2 - 27 Nov 2023 19:41 - John Abbott

- Status changed from New to Resolved

- Assignee set to John Abbott

- % Done changed from 0 to 60

I have changed the code to use the new prototype evaluation code (see issue [#1770](#)), and it is now usefully faster :-)
[for the example in the description: previously about 15s; now about 1s]
This is probably good enough: most of the time is spent evaluating the polynomial...
Not sure if we can be cleverer about which points to evaluate at? [*i.e.* just use a subset of the points we actually use]

#3 - 01 Dec 2023 21:29 - John Abbott

- Status changed from Resolved to Feedback

- % Done changed from 60 to 90

I regard this as fixed: the remaining work is in issue [#1770](#)

#4 - 22 Dec 2023 20:57 - John Abbott

- Status changed from Feedback to Closed

- % Done changed from 90 to 100

- Estimated time set to 2.22 h

It is now good enough to be closed.