# CoCoALib - Bug #1729

## Bug HilbertPoly of zero-dimensional ideals

23 Mar 2023 05:20 - Anna Maria Bigatti

Status:	Closed	Start date:	23 Mar 2023
Priority:	Urgent	Due date:	
Assignee:	Anna Maria Bigatti	% Done:	100%
Category:	Maths Bugs	Estimated time:	0.00 hour
Target version:	CoCoALib-0.99850	Spent time:	0.60 hour
Description			

HilbertPoly works fine in general, but not for zero-dimensional ideals (result should be the polynomial 0)

```
/**/ use R ::= QQ[w,x,y,z];
/**/ I := ideal(z^2, w, x^2, y^2);
/**/ HilbertFn(R/I);
H(0) = 1
H(1) = 3
H(2) = 3
H(3) = 1
H(t) = 0 for t >= 4
/**/ HilbertPoly(R/I);
t^3 +3*t^2 +3*t +1
```

### **Related issues:**

Related to CoCoA-5 - Bug #1734: Fix call to HilbertPoly in test/TutHokkaido5

12 Apr 2023

Closed

### History

#### #1 - 23 Mar 2023 05:21 - Anna Maria Bigatti

- Category set to bug
- Assignee set to Anna Maria Bigatti
- Priority changed from Normal to Urgent
- Target version set to CoCoA-5.4.2
- % Done changed from 0 to 10

#### #2 - 23 Mar 2023 05:22 - Anna Maria Bigatti

- Project changed from CoCoA-5 to CoCoALib
- Category deleted (bug)
- Target version deleted (CoCoA-5.4.2)

#### #3 - 23 Mar 2023 05:23 - Anna Maria Bigatti

code is in SparsePolyOps-hilbert.C

#### #4 - 23 Mar 2023 05:40 - Anna Maria Bigatti

- Subject changed from Bug HilbertPoly of zer-dimensional ideals to Bug HilbertPoly of zero-dimensional ideals
- Category set to Maths Bugs
- Status changed from New to Feedback
- Target version set to CoCoALib-0.99850
- % Done changed from 10 to 90

silly mistake, as expected. Fixed Added check for standard grading (otherwise there is no single HilbertPoly)

#### #5 - 23 Mar 2023 05:44 - Anna Maria Bigatti

checked in. @Anna: Test also similar functions.

### #6 - 12 Apr 2023 14:43 - Anna Maria Bigatti

- Related to Bug #1734: Fix call to HilbertPoly in test/TutHokkaido5 added

### #7 - 12 Apr 2023 14:45 - Anna Maria Bigatti

- Status changed from Feedback to Closed

- % Done changed from 90 to 100