

CoCoA-5 - Bug #1139

Radical problems

12 Dec 2017 14:58 - John Abbott

Status:	Closed	Start date:	12 Dec 2017
Priority:	Urgent	Due date:	
Assignee:	Anna Maria Bigatti	% Done:	100%
Category:	enhancing/improving	Estimated time:	1.51 hour
Target version:	CoCoA-5.2.2	Spent time:	1.45 hour
Description			
There are still problems with radical: sometimes it gives an empty list instead of an ideal. /**/ I := ideal(x^2, x*y+1); /**/ radical(I); []			
Related issues:			
Related to CoCoA-5 - Bug #1133: Radical bug		Closed	01 Dec 2017

History

#1 - 12 Dec 2017 14:58 - John Abbott

- Related to Bug #1133: Radical bug added

#2 - 12 Dec 2017 15:06 - John Abbott

The problem seems to be when the ideal contains 1.

```
/**/ radical(ideal(x/x));  
[]
```

#3 - 12 Dec 2017 16:58 - John Abbott

Here is another case where things go wrong:

```
/**/ use QQ[x,y,z,t];  
/**/ I := ideal(2*x*y*z + 2*y*t, -y^3 -x*y*t +x*t^2, x^2*z +2*x*y*z +y^2*t);  
/**/ radical(I);  
--> ERROR: I don't know how to evaluate operator + between IDEAL and LIST  
--> WHERE: at line 1105 (column 19) of radical.cpkg5
```

#4 - 12 Dec 2017 17:15 - John Abbott

Much like the example above:

```
I := ideal(-x^3 -x*y^2 -x^2, x^2*z -x^2 +y^2, -x^2*t +x*t^2 -x*t);  
I := ideal(y*z^3 +y^2*z*t, x^2*z +2*y^2, -x*y*t +y*z);
```

#5 - 12 Dec 2017 19:32 - Anna Maria Bigatti

another

```
/**/ I := ideal(x*(x^2 -y -x), x^2*z +y, t);
```

#6 - 13 Dec 2017 13:23 - Anna Maria Bigatti

- *Status changed from New to Closed*

- *Assignee set to Anna Maria Bigatti*

- *% Done changed from 0 to 100*

- *Estimated time set to 1.51 h*

Fixed: all the problem was in ideal(1).
(there is a naughty trick in ElimRedundant(E))
Now radical(I) exits I immediately if IsOne(I).