

CoCoA-5 - Design #1772

Continued fraction: arg type RAT or RAT/INT?

28 Nov 2023 22:12 - John Abbott

Status:	New	Start date:	28 Nov 2023
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	enhancing/improving	Estimated time:	0.00 hour
Target version:	CoCoA-5.4.2	Spent time:	0.50 hour
<div>Description</div> <p>Currently the continued fraction functions expect an arg of type RAT. This cause a problem in one program I wrote which had the following structure:</p> <pre>N := AsRAT (...); D := AsRAT (...); CF := ContFrac(N/D);</pre> <p>The problem was that in one instance N/D actually turned out to be an integer, so CoCoA-5 automatically gave the value the type INT. This triggered an error (after several minutes' execution).</p> <p>Should we allow the continued fraction functions to accept INT or not?</p>			

History

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Possible options:

- disable the auto conversion from RAT to INT -- JAA doubts that this is wise (it could cause many other problems)
- extend all the continued fraction functions to accept both RAT and INT -- a bit tedious; also it barely makes sense to ask for the continued fraction of an integer (it's well defined, but fairly pointless)
- update the documentation (*e.g.* with an example like the one which gave me problems, and a solution)
- if we do extend to allow INT too, should we also allow RINGELEM? [we must then convert it to RAT]