

## CoCoALib - Feature #233

### AsINT and AsRAT -- ConvertTo<BigInt> and ConvertTo<BigRat>

25 Sep 2012 16:32 - John Abbott

<b>Status:</b>	Closed	<b>Start date:</b>	25 Sep 2012
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	John Abbott	<b>% Done:</b>	100%
<b>Category:</b>	New Function	<b>Estimated time:</b>	2.00 hours
<b>Target version:</b>	CoCoALib-0.99532	<b>Spent time:</b>	2.00 hours
<b>Description</b>			
Should we implement functions very like <b>AsINT</b> and <b>AsRAT</b> in CoCoALib?			
What should their names be? Anna suggests <b>AsBigInt</b> and <b>AsBigRat</b> ?			
If so, design them properly!			
Anna also points out that <b>AsPolyRing</b> and other similarly named functions for rings are essentially costless casts whereas <b>AsBigInt</b> is a costly operation.			
<b>2014-01:</b> Final decision is for <b>ConvertTo&lt;BigInt&gt;</b> , <b>ConvertTo&lt;BigRat&gt;</b>			
<b>Related issues:</b>			
Related to CoCoALib - Feature #253: W.Brun's wish list		<b>Closed</b>	<b>04 Oct 2012</b>
Related to CoCoA-5 - Design #301: How to obtain an integer from a finite fiel...		<b>Closed</b>	<b>08 Feb 2013</b>
Related to CoCoA - Support #425: Osnabrueck 2014-01		<b>Closed</b>	<b>27 Jan 2014</b>
Related to CoCoALib - Feature #426: ConvertTo with optional arg to give more ...		<b>Closed</b>	<b>27 Jan 2014</b>
Related to CoCoALib - Feature #61: Conversion functions -- documentation		<b>Closed</b>	<b>13 Dec 2011</b>

## History

### #1 - 04 Oct 2012 12:22 - John Abbott

- Status changed from New to In Progress

JAA suggests using the convert family for achieving this. For instance

```
RingElem x(...);
BigInt N = ConvertTo<BigInt>(x);
BigRat Q = ConvertTo<BigRat>(x);
```

**2013-01-30** JAA has made experimental impl of ConvertTo<BigInt> for RingElem.

### #2 - 05 Oct 2012 18:07 - John Abbott

If I define ConvertTo for converting RingElem into BigInt, should I define all members of the convert family for performing the conversions? This might make IsInteger redundant...

### #3 - 28 Jan 2013 08:07 - Anna Maria Bigatti

- Category set to New Function

**#4 - 20 Nov 2013 19:58 - John Abbott**

An advantage of Anna's suggested names is that they are more compact than using the ConvertTo template fn.

JAA suggests looking through CoCoALib source code (and examples?) to see how IsInteger is used.

PS it'd be nice to close this task soon; it's little more than just a naming issue.

**#5 - 28 Jan 2014 14:48 - Anna Maria Bigatti**

- Status changed from *In Progress* to *Feedback*

- Assignee set to *John Abbott*

- Target version set to *CoCoALib-0.9953*

- % Done changed from *0* to *80*

Final decision is for `ConvertTo<BigInt>` and `ConvertTo<BigRat>`

**#6 - 21 Mar 2014 14:28 - Anna Maria Bigatti**

- Target version changed from *CoCoALib-0.9953* to *CoCoALib-0.99532*

**#7 - 01 Apr 2014 18:59 - Anna Maria Bigatti**

- Status changed from *Feedback* to *Closed*

- % Done changed from *80* to *100*

- Estimated time set to *2.00 h*

Please note that **ConvertTo<..>(N)**  
also allows passing an error message

```
ConvertTo<long>(NumIndets, ErrMesg)
<\pre>
```

**#8 - 02 Apr 2014 09:19 - Anna Maria Bigatti**

- Subject changed from *AsINT and AsRAT* to *AsINT and AsRAT -- ConvertTo<BigInt> and ConvertTo<BigRat>*