Ruby trunk - Bug #8894

Fixnum#quo returns wrong result when given a float

09/11/2013 01:07 PM - marcandre (Marc-Andre Lafortune)

Status:	Closed		
Priority:	Normal		
Assignee:			
Target version:			
ruby -v:	2.2	**Backport:**	

Description

Fixnum#quo is buggy.

2.quo(2.0) # => Rational(2, 2)

1) Should return a float, not a rational
2) Moreover, that rational is invalid as it is not reduced.

Noticed by David MacMahon [ruby-core:57121]

Related issues:

Related to Ruby trunk - Bug #5515: Integer#quo(aFloat) □□□□ Rational □□□	**Closed**	**10/30/2011**

History

#1 - 09/11/2013 01:24 PM - marcandre (Marc-Andre Lafortune)

Issue is actually with Rational#/ that apparently makes a special case of float values that are "multiples" of the denominator, so that:

Rational(6) / 2.0 # => Rational(6, 2)

Putting aside the bug that the Rational returned is not reduced, I feel it is the wrong to return a Rational for many reasons.

1) A float is imprecise; other than very special cases one should not obtain exact values whenever one is involved in the calculation.
2) Inconsistent with Rational(5) / BigDecimal(2) that returns (correctly) a BigDecimal)
3) Inconsistent with Rational(6) / 1.5, that returns which won't return 4 nor Rational(4)

Is there any reason we should keep that special case?

diff --git a/rational.c b/rational.c
index 652f5ac..f8284d9 100644
--- a/rational.c
+++ b/rational.c
@@ -959,9 +959,6 @@ nurat_div(VALUE self, VALUE other)

        if (isnan(x)) return DBL2NUM(NAN);
        if (isinf(x)) return INT2FIX(0);

- if (x != 0.0 && modf(x, &den) == 0.0) {
- return rb_rational_raw2(dat->num, f_mul(rb_dbl2big(den), dat->de
- }   }   return rb_funcall(f_to_f(self), '/', 1, other); }

#2 - 03/29/2017 06:06 AM - samu0101 (tatsuro yasukawa)

- ruby -v changed from p195 to 2.2

This problem seems to be solved already since I tried this by ruby 2.2 and didn't have any problem.
So we can close this issue.

□ Result by ruby 2.2

2.quo(2.0) # => 1.0

Rational(6) / 2.0 # => 3.0

#3 - 03/29/2017 06:51 AM - sorah (Sorah Fukumori)

- Backport deleted (1.9.3: UNKNOWN, 2.0.0: UNKNOWN)

- Status changed from Open to Feedback

#4 - 03/29/2017 02:59 PM - marcandre (Marc-Andre Lafortune)

- Status changed from Feedback to Closed