

Ruby - Bug #3137

complex.rb changes exceptions of Math

04/12/2010 11:01 PM - mame (Yusuke Endoh)

Status:Closed Priority:Normal Assignee:keiju (Keiju Ishitsuka) Target version:2.0.0 ruby -v:-	Backport:
Description =begin ~~~~~ ~~~~~ [ruby-core:28204] Brian Ford complex require Math.atan(nil) ~~~~~ \$./ruby -e 'p Math.atanh(nil)' -e:1:in atanh': can't convert nil into Float (TypeError) from -e:1:in ' \$./ruby -rcomplex -e 'p Math.atanh(nil)' /home/mame/work/ruby-trunk-local/lib/ruby/1.9.1/cmath.rb:196:in atanh': undefined method real?' for nil:NilClass (NoMethodError) from -e:1:in `` Ruby ~~~~~ duck typing ~~~~~ ~~~~~CMath ~~~~~ Math ~~~~~ ~~~~~ Math ~~~~~ ~~~~~ ~~~~~ ~~~~~ [ruby-dev:40953] ~~~~~ diff --git a/lib/cmath.rb b/lib/cmath.rb index b23dac2..aa2d9bb 100644 --- a/lib/cmath.rb +++ b/lib/cmath.rb @@ -27,6 +27,7 @@ module CMath alias atanh! atanh def exp(z) • z = Float(z) if z.real? exp!(z) else @@ -36,9 +37,9 @@ module CMath end end • def log(*args) • z, b = args • if z.real? and z >= 0 and (b.nil? or b >= 0) • def log(z, b = nil) • z = Float(z) • if z.real? and z >= 0 and (b.nil? or (b = Float(b); b >= 0)) log!(*args) else a = Complex(log!(z.abs), z.arg) @@ -50,6 +51,7 @@ module CMath	

```

end

def log2(z)

  • z = Float(z)
    if z.real? and z >= 0
      log2!(z)
    else
      @@ -58,6 +60,7 @@ module CMath
    end

def log10(z)

  • z = Float(z)
    if z.real? and z >= 0
      log10!(z)
    else
      @@ -66,6 +69,7 @@ module CMath
    end

def sqrt(z)

  • z = Float(z)
    if z.real?
      if z < 0
        Complex(0, sqrt!(-z))
      @@ -85,6 +89,7 @@ module CMath
    end

def cbrt(z)

  • z = Float(z)
    if z.real? and z >= 0
      cbrt!(z)
    else
      @@ -93,6 +98,7 @@ module CMath
    end

def sin(z)

  • z = Float(z)
    if z.real?
      sin!(z)
    else
      @@ -102,6 +108,7 @@ module CMath
    end

def cos(z)

  • z = Float(z)
    if z.real?
      cos!(z)
    else
      @@ -111,6 +118,7 @@ module CMath
    end

def tan(z)

  • z = Float(z)
    if z.real?
      tan!(z)
    else
      @@ -119,6 +127,7 @@ module CMath
    end

def sinh(z)

```

```

• z = Float(z)
  if z.real?
    sinh!(z)
  else
    @@ -128,6 +137,7 @@ module CMATH
    end

def cosh(z)

  • z = Float(z)
    if z.real?
      cosh!(z)
    else
      @@ -137,6 +147,7 @@ module CMATH
      end

def tanh(z)

  • z = Float(z)
    if z.real?
      tanh!(z)
    else
      @@ -145,6 +156,7 @@ module CMATH
      end

def asin(z)

  • z = Float(z)
    if z.real? and z >= -1 and z <= 1
      asin!(z)
    else
      @@ -153,6 +165,7 @@ module CMATH
      end

def acos(z)

  • z = Float(z)
    if z.real? and z >= -1 and z <= 1
      acos!(z)
    else
      @@ -161,6 +174,7 @@ module CMATH
      end

def atan(z)

  • z = Float(z)
    if z.real?
      atan!(z)
    else
      @@ -169,6 +183,7 @@ module CMATH
      end

def atan2(y, x)

  • x, y = Float(x), Float(y)
    if y.real? and x.real?
      atan2!(y, x)
    else
      @@ -177,6 +192,7 @@ module CMATH
      end

def asinh(z)

  • z = Float(z)
    if z.real?
      asinh!(z)
    else

```

```
@@ -185,6 +201,7 @@ module CMath
end
```

```
def acosh(z)
```

```
  • z = Float(z)
    if z.real? and z >= 1
      acosh!(z)
    else
      @@ -193,6 +210,7 @@ module CMath
    end
```

```
def atanh(z)
```

```
  • z = Float(z)
    if z.real? and z >= -1 and z <= 1
      atanh!(z)
    else
```

```
--
```

Yusuke Endoh mame@tsg.ne.jp

```
=end
```

Related issues:

Is duplicate of Ruby - Bug #2756: Issues with Math and Complex behavior on 1.9

Rejected

Associated revisions

Revision 0f6794cb - 06/13/2011 10:48 AM - keiju (Keiju Ishitsuka)

- lib/cmath.rb: add new methd Object#real?. fix #3137

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@32055 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

Revision 09dee51b - 06/29/2011 03:31 PM - keiju (Keiju Ishitsuka)

- lib/cmath.rb: make same exception for Math. fix [Bug #3137].

git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@32297 b2dd03c8-39d4-4d8f-98ff-823fe69b080e

History

#1 - 04/12/2010 11:41 PM - marcandre (Marc-Andre Lafortune)

```
=begin
```

A problem with the patch is that Float("1.1") returns 1.1.

In my todo list is "propose strict coercion methods"... I had to code them up in Matrix

```
=end
```

#2 - 04/13/2010 02:51 AM - mame (Yusuke Endoh)

- Target version changed from 1.9.2 to 2.0.0

```
=begin
```

Hi,

2010-04-12 23:41 Marc-Andre Lafortune redmine@ruby-lang.org:

A problem with the patch is that Float("1.1") returns 1.1.

In my todo list is "propose strict coercion methods"... I had to code them up in Matrix

Oh, you are right. Thanks.

I guess "strict coercion" will be good, but it is absolutely new feature. So, let's leave [#2756](#) and this ticket to 1.9.3 (or later).

```
--
```

Yusuke ENDOH mame@tsg.ne.jp

=end

#3 - 04/13/2010 02:57 PM - keiju (Keiju Ishitsuka)

```
=begin
#####.
```

In the message: "[Bug [#3137](#)] complex.rb changes exceptions of Math",
on Apr/12 23:01(JST) Yusuke Endoh writes:

#####

#####.

```
[ruby-core:28204]  Brian Ford  complex  require  Math.atan(nil) #####
```

```
$ ./ruby -e 'p Math.atanh(nil)'
-e:1:in atanh': can't convert nil into Float (TypeError) from -e:1:in '
```

```
$ ./ruby -rcomplex -e 'p Math.atanh(nil)'
/home/mame/work/ruby-trunk-local/lib/ruby/1.9.1/cmath.rb:196:in atanh': undefined method real?' for nil:NilClass (NoMethodError)
from -e:1:in ``
```

```
Ruby ##### duck typing #####
#####CMath ##### Math #####
##### Math #####
#####
```

#####. #####...

#####, Complex#atanh#####,

```
-e:1:in `atanh': can't convert nil into Float (TypeError)
```

```
#####. Complex#atanh#####
#####?
```

```
Math.log(-1)  #
Math::DomainError: Numerical argument is out of domain - "log"
```

#####?

#####

z#####.

```
#####Math#####, #####, NoMethodError#####
#####raise#####.
```

```
----->>  ##  <<---
----->> e-mail: keiju@ishitsuka.com <<---
=end
```

#4 - 04/13/2010 02:57 PM - keiju (Keiju Ishitsuka)

```
=begin
#####.
```

In the message: "[Bug [#3137](#)] complex.rb changes exceptions of Math",
on Apr/12 23:01(JST) Yusuke Endoh writes:

#####

#####.

```
[ruby-core:28204]  Brian Ford  complex  require  Math.atan(nil) #####
```

```
$ ./ruby -e 'p Math.atanh(nil)'
-e:1:in atanh': can't convert nil into Float (TypeError) from -e:1:in '

$ ./ruby -rcomplex -e 'p Math.atanh(nil)'
/home/mame/work/ruby-trunk-local/lib/ruby/1.9.1/cmath.rb:196:in atanh': undefined method real?' for nil:NilClass (NoMethodError)
from -e:1:in `'
```

```
Ruby の duck typing
CMath の Math
Math の
```

...

Complex#atanh,

-e:1:in `atanh': can't convert nil into Float (TypeError)

Complex#atanh. Complex#atanh?

Math.log(-1)
Math::DomainError: Numerical argument is out of domain - "log"

?

z.

Math, NoMethodError
raise.

----->> <<-----
----->> e-mail: keiju@ishitsuka.com <<-----

=end

#5 - 04/13/2010 03:19 PM - matz (Yukihiro Matsumoto)

=begin

In message "Re: [\[ruby-dev:40967\]](#) Re: [Bug #3137] complex.rb changes exceptions of Math"
on Tue, 13 Apr 2010 14:56:59 +0900, keiju@ishitsuka.com () writes:

...

Complex#atanh,

> -e:1:in `atanh': can't convert nil into Float (TypeError)

Complex#atanh. Complex#atanh?

nil Float

=end

#6 - 04/13/2010 04:30 PM - keiju (Keiju Ishitsuka)

=begin

In [\[ruby-dev:40968\]](#) the message: "[[ruby-dev:40968](#)] Re: [Bug #3137]
complex.rb changes exceptions of Math", on Apr/13 15:19(JST) Yukihiro
Matsumoto writes:

```

|[], Complex#atanh[],
|> -e:1:in `atanh': can't convert nil into Float (TypeError)
|[] []. Complex#atanh[]
|[] ?

```

```

[] nil[]nil[]
[] Float[]
[]

```

~~~~~:

```

def exp(z)
begin
if z.real?
exp!(z)
else
ere = exp!(z.real)
Complex(ere * cos!(z.imag),
ere * sin!(z.imag))
end
rescue NoMethodError => exp
if exp.name == :real?
raise "error"
end
raise
end
end

```

```

[] []. "error"[]

```

```

|> -e:1:in `atanh': can't convert nil into Float (TypeError)

```

```

[] [].

```

```

[],

```

```

def exp(z)
begin
if z.real?
exp!(z)
else
ere = exp!(z.real)
Complex(ere * cos!(z.imag),
ere * sin!(z.imag))
end
rescue NoMethodError => exp
if exp.name == :real?
return exp(Float(z))
end
raise
end
end

```

```

[]... Numeric[], real? []
[], Math[], Float[]
[], CMath[]Math[]
[], []...

```

```

----->> [] [] <----
----->> e-mail: keiju@ishitsuka.com <----

```

```

=end

```

#7 - 04/13/2010 04:48 PM - matz (Yukihiro Matsumoto)

```

=begin
[] []

```

In message "Re: [[ruby-dev:40969](#)] Re: [Bug [#3137](#)] complex.rb changes exceptions of Math" on Tue, 13 Apr 2010 16:30:38 +0900, [keiju@ishitsuka.com](mailto:keiju@ishitsuka.com) ([]) writes:

```
exp("1.1")
=end
```

**#8 - 04/13/2010 05:05 PM - keiju (Keiju Ishitsuka)**

```
=begin
XXXXXXXXXX.
```

In [\[ruby-dev:40970\]](#) the message: "[\[ruby-dev:40970\]](#) Re: [Bug [#3137](#)] complex.rb changes exceptions of Math", on Apr/13 16:47(JST) Yukihiro Matsumoto writes:

[illegible]

```
|00000000. "error"|00000000000000000000, 000  
|> -e:1:in `atanh': can't convert nil into Float (TypeError)  
|00000000000000000000000000.  
|000000000000real?|00000000000000000000
```

000, 000000. 000000, Math 000000000000  
0000000000?

00000000000000000000000000000000, reject000  
 0000000...  
 000000000000000?

```
exp("1.1")
```

00.000000

```
def exp(z)
begin
if z.real?
exp!(z)
else
ere = exp!(z.real)
Complex(ere * cos!(z.imag),
ere * sin!(z.imag))
end
rescue NoMethodError => exp
```

```
if exp.name == :real?
  return exp!(z)
end
raise
end
end
```

```
end.
```

```
----->>  [] [] <<---
----->> e-mail: keiju@ishitsuka.com <<---
```

```
=end
```

#### #9 - 04/13/2010 05:11 PM - matz (Yukihiro Matsumoto)

```
=begin
[] [] [] [] [] [] [] []
```

In message "Re: [\[ruby-dev:40971\]](#) Re: [Bug #3137] complex.rb changes exceptions of Math" on Tue, 13 Apr 2010 17:05:17 +0900, [keiju@ishitsuka.com](mailto:keiju@ishitsuka.com) ([]) writes:

```
| [], []. []. Math[],
| []?
|
| [], reject[]
| []...
| []?
```

```
Float[]exp
[]
```

```
=end
```

#### #10 - 04/13/2010 10:42 PM - mame (Yusuke Endoh)

```
=begin
[] []
```

2010 4 13 17:11 Yukihiro Matsumoto [matz@ruby-lang.org](mailto:matz@ruby-lang.org):

```
[] [] [] [] [] [] [] []
```

In message "Re: [\[ruby-dev:40971\]](#) Re: [Bug #3137] complex.rb changes exceptions of Math" on Tue, 13 Apr 2010 17:05:17 +0900, [keiju@ishitsuka.com](mailto:keiju@ishitsuka.com) ([]) writes:

```
| [], []. Math[],
| []?
|
| [], reject[]
| []...
| []?
```

```
Float[]exp
[]
```

```

[]
[]
```

```
def tolerant_exp(x)
  begin
    Math.exp(x)
  rescue TypeError
    0
  end
end
```

```
complex.rb
.....
```

[] [] [] [] [] [] **NoMethodError** [] **TypeError** [] [] [] [] [] [] [] []

```
=end
```

**#11 - 04/14/2010 01:32 PM - keiju (Keiju Ishitsuka)**

```
=begin
□□□□□□□□□□□□.
```

In [\[ruby-dev:40974\]](#) the message: "[\[ruby-dev:40974\]](#) Re: [Bug [#3137](#)] complex.rb changes exceptions of Math", on Apr/13 22:42(JST) Yusuke ENDOH writes:

□□□□□

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

☐☐

```
def tolerant_exp(x)
begin
  Math.exp(x)
rescue TypeError
  0
end
end
```

```

0000000000complex.rb 0000000000000000
000000.....000000000000000000000000

```

[illegible]

```

#####reject #####
#####\[ruby-core:28204\]##### Brian Ford #####
#####

```

```

#####. #####([Bug#1788]#####reject#####
0. #####, #####
0. cmath.rb 0. #####.

```

□□□□□□, □□□□□□□□□□□□□□□□□□□□□□?

```

----->>  [] [] <<-----
----->> e-mail: kejiu@ishitsuka.com <<-----

```

```
=end
```

#12 - 04/14/2010 09:53 PM - mame (Yusuke Endoh)

```
=begin
□□□□□
```

2010/4/14 13:32 送信 keiju@ishitsuka.com:

```

#####reject #####
#####\[ruby-core:28204\]##### Brian Ford #####
#####

```

```
####. #### ([Bug#1788]#####reject#####  
0. #####, #####  
0, cmath.rb 0, #####.
```

```
cmath.rb

```

、

```


```

```
Marc-Andre

```

```
--

```

Yusuke ENDOH [mame@tsq.ne.jp](mailto:mame@tsq.ne.jp)

```
=end

```

**#13 - 04/20/2010 09:37 PM - tadf (tadayoshi funaba)**

```
=begin

```

```
lib/cmath.rb

```

```
cmath.rb (complex.rb)
Math C
rational.c complex.c
complex.rb (complex)

```

```
=end

```

**#14 - 09/14/2010 04:01 PM - shyouhei (Shyouhei Urabe)**

- Status changed from Open to Assigned

```
=begin

```

```
=end

```

**#15 - 06/11/2011 02:59 PM - ko1 (Koichi Sasada)**

```


```

**#16 - 06/14/2011 12:29 AM - tadf (tadayoshi funaba)**

- ruby -v changed from ruby 1.9.2dev (2010-04-12 trunk 27317) [i686-linux] to -

```
CMath, Object#real?, TypeError

```

```


```

```
Numeric
complex.rb complex.rb Math

```

**#17 - 06/14/2011 12:29 AM - tadf (tadayoshi funaba)**

```
CMath, Object#real?, TypeError

```

```


```

```
Numeric
complex.rb complex.rb Math

```

□□□□□□□□□□.

```
Math.cos(0), CMath.Cos(0), Object.prototype.toString.call(Math.cos(0)),  
Object.prototype.toString.call(CMath.Cos(0)).
```

[illegible]

□□□□□□□□□□□□□□. □□□□□□□□□□□□□□?

```

Numeric
complex.rb
Math

```

[illegible]

```

----->>  []  []  <<-----
----->> e-mail: kejiu@ishitsuka.com <<-----

```

□□□□□□□□□□.

```

    console.log('CMath', CMath, Object#real? , TypeError);
    console.log('');

```

[illegible]

□□□□□□□□□□□□□□. □□□□□□□□□□□□□□?

```

Numeric
complex.rb
Math

```

**Math**, **CMath**, **Math.h**, **CMath.h**, **math.h**, **cmath.h**

```

----->>  [] [] <<---
----->> e-mail: kejiu@ishitsuka.com <<---

```

□□□□□□□□□□□□□□, □□□□□□□□□□□□□□?

[illegible]

□□□□□□□□□□□□□□. □□□□□□□□□□□□□□?

Object Numeric

日本語

**#22 - 06/25/2011 03:51 PM - sho-h (Sho Hashimoto)**

r32055 `CMath.log` `Math.log` `TypeError`

`CMath.log(8, "2")` `# => ArgumentError`

**#23 - 06/30/2011 12:31 AM - keiju (Keiju Ishitsuka)**

- *Status changed from Assigned to Closed*

- *% Done changed from 0 to 100*

This issue was solved with changeset r32297.

Yusuke, thank you for reporting this issue.

Your contribution to Ruby is greatly appreciated.

May Ruby be with you.

- 
- lib/cmath.rb: make same exception for Math. fix [Bug [#3137](#)].