The symbolic mess

The symbolic ring (SR) is not fitted to answer mathematical questions like equality, existence, etc. Every element in the symbolic ring are expression with no defined semantics... as a consequence we end up with many errors.

1.1 1 - functions are not well defined objects

```python
In [1]: exp.category()
Out[1]: Category of objects
In [9]: zeta(5).is_real()
Out[9]: False
In [10]: cos(pi/7).is_real()
Out[10]: True
In [13]: x, y = SR.var('x,y')
   assume(x, 'real')
   assume(y, 'real')
   assume(x > 0)
   assume(y > 0)
In [14]: x^log(y) == y^log(x)
Out[14]: xˆlog(y) == yˆlog(x)
In [15]: bool(x^log(y) == y^log(x))
Out[15]: False
```
1.2 2 - silently and unpredictably mixes exact and unexact numbers

In [3]: a = pi - 3.641592653589793238 + 1/2
   print a

pi - 3.14159265358979324

In [4]: a

Out[4]: pi - 3.14159265358979324

In [5]: bool(a == 0)

Out[5]: True

1.3 3 - π and e are rationals

In [6]: 6701487259 * pi == 21053343141

Out[6]: 6701487259*pi == 21053343141

In [7]: bool(6701487259 * pi == 21053343141)

Out[7]: True

In [ ]:

In [8]: 161260336 * e == 438351041

Out[8]: 161260336*e == 438351041

In [9]: bool(161260336 * e == 438351041)

Out[9]: True

In [ ]: