To cast or not to cast?

```
Foo f = new Foo(); ✓
Foo g = new Bar(); ✓
g.c(); X Won't compile — no method c() defined on type Foo
((Bar) g).c(); ✓ Compiles ✓
Bar h = (Bar) g;
   h.b(); X won't compile
((Baz) h).b(); X won't compile
```
Baz baz = new Baz();
((Foo) baz).f();

unnecessary cast
Use: baz.f(); instead

Foo f = new Bar();
((Ban) f).f();

compiles but get a class cast exception at run-time
Application uses numbers:

Design
1. 22/7

Number
  - Real
  - Imag
  - Int
  - Rat

2. Real
   - Rat
   - Irrational?
   - Int

3. Number
   - Based on internal rep.
     - Rational
     - Imag
     - Int
     - Real

Rational divide (Int i)

Real (decimal)
Imaginary
Integer
Rational