

Functional

Imperative

Mental model

Algebraic substitution:
 $3+4*5 \Rightarrow 3+20 \Rightarrow 23$

von Neumann machine:
Store into & retrieve from boxes

Writing tests

`f(5,3) === rightAnswer`

```
setFoo(5); setBar(3); setOther(-4);  
doF();  
getResult().equals(rightAnswer)  
&&  
getOther() === -4 // hasn't changed
```

Changing tests

Can comment out or re-order tests
without changing results

Each test affects results of
subsequent tests

Debugging

What is the value of this variable?

What is the value of this variable
at this time?

Habits

Separate I/O and computation;
short, reusable, single-purpose
functions

Long methods that mix I/O and
computation, doing several
different jobs