We need a list of all the atomics that are legal

steps:

1. look through problem examples and make list of all atomics
2. look through theorem database document and find all used atomics, add to list
3. add other atomics that are implied (if you see lessThan, add greaterThan as well)

Items to be clarified;

* Given (is it an atomic?)
* Find (is it an atomic?)
* test (is it different from find?)
* do we care about floats, integers, binary, and hexadecimal values?

Here's the list:

VALUE: Refers to a specific thing, such as a single integer, list of numbers, etc

TYPE: specific data structure types, such as ints, strings, arrays

ATOMIC: an existing specified atomic

**Core Atomic**

list<type>

child(value)

sorted(value) <- the value inside needs to be sortable- do we wanna check for this?

permutation(value, value)

array<type>

equal(value, value)

forall(*value* st *atomic*)

exists(*value* st *atomic*)

lessthan(value, value)

greaterthan(value, value)

lessthanequal(value, value)

greaterthanequal(value, value)

*value* st *atomic*

string(value)

int(value)

float(value)

set<type>

graph<type>

length(value)

node(value)

tree<type>

dist(value, value)

index(value, value)

path(value, value, value, value)

plus(value, value, value)

minus(value, value, value)

times(value, value, value)

divide(value, value, value)

**Syntactic Sugar Atomics**

! (atomic) <- Can be used to negate atomics, easier than creating new ones

max(value)

min(value)

even(value)

odd(value) <- I know this isn’t accepted yet, but it should be valid in the future

sum(value, value)

average(value, value)