

numAtomsInStoichiometric: Stoichiometric T \times Element T \rightarrow N
 numAtomsInStoichiometric (S, e) \equiv S.coeff * numAtomsInCompound (S, Compound, e)

Finish next day
H.W.

numAtomsInChemEq: Chemical Eq T \times Element T \rightarrow N
 numAtomsInChemEq (C, e) \equiv $\sum (s: \text{Stoichiometric T} \mid s \in C \cdot$
 numAtomsIn^{Stoichiometric}Compound (s, e))

elmInCompound: Compound T \rightarrow set of Element T
 elmInCompound (C) \equiv { m: Molecule T | m \in C \cdot m.elm }

elmInStoichiometric: Stoichiometric T \rightarrow set of Element T
 elmInStoichiometric (S) \equiv elmInCompound (S, Compound)

elmInChemEq: Chemical Eq T \rightarrow set of Element T
 elmInChemEq (C) \equiv $\cup (s: \text{Stoichiometric T} \mid s \in C \cdot \text{elmInStoichiometric (s)})$

H.W.

isBalancedReactForElm: Reactor T \times Element T \rightarrow B
 isBalancedReactForElm (R, e) \equiv
 numAtomsInChemEq (R[O], e) = numAtomsInChemEq (R[I], e)

H.W.

isBalancedReactor (R): Reactor T \rightarrow B
~~isBalancedReactor (R): Reactor T \rightarrow B~~
 $\forall (e: \text{Element T} \mid e \in \text{elmInChemEq (R[O])})$
 isBalancedReactForElm (R, e)

H.W.