

## Problem 1.6

True or false? (a) One gram is Avogadro's number of times as heavy as 1 amu. (b) The Avogadro constant  $N_A$  has no units. (c) Mole fractions are intensive properties. (d) One mole of water contains Avogadro's number of water molecules.

---

### Solution

- (a) True, the atomic masses in the periodic table are also molar masses for a mole of atoms.
- (b) False, Avogadro's number ( $6.02 \times 10^{23}$ ) is dimensionless, but the Avogadro constant  $N_A$  has units of  $\text{mol}^{-1}$ .
- (c) True, the mole fraction is a ratio of extensive quantities, making it intensive.
- (d) True.