

## More on MIXTURES

- Mixtures can be further classified based on uniformity

### HOMOGENEOUS MIXTURES

- uniform in composition and properties throughout
- physical properties the same at any point in the mixture

Examples:

salt water, toilet bowl cleaner, vodka

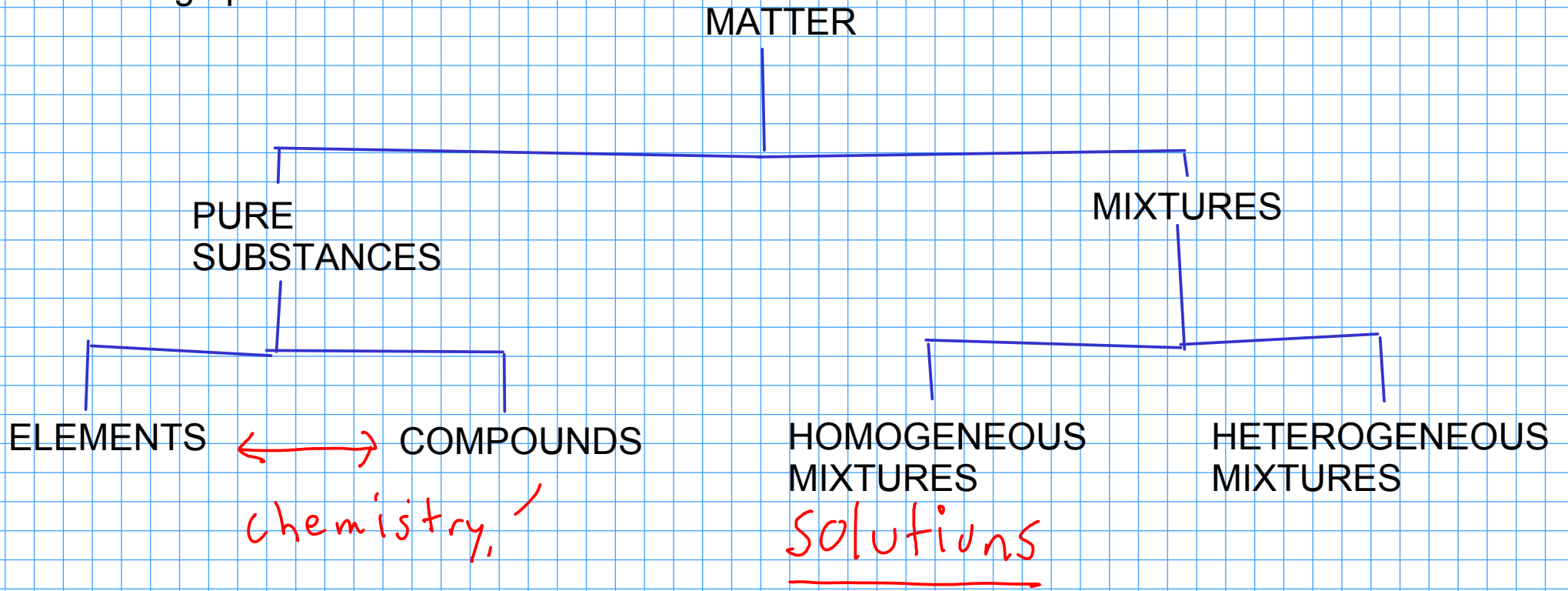
### HETEROGENEOUS MIXTURES

- nonuniform
- physical properties may differ (sometimes dramatically) at different points in the mixture

Examples:

beef, dirt, macaroni and cheese

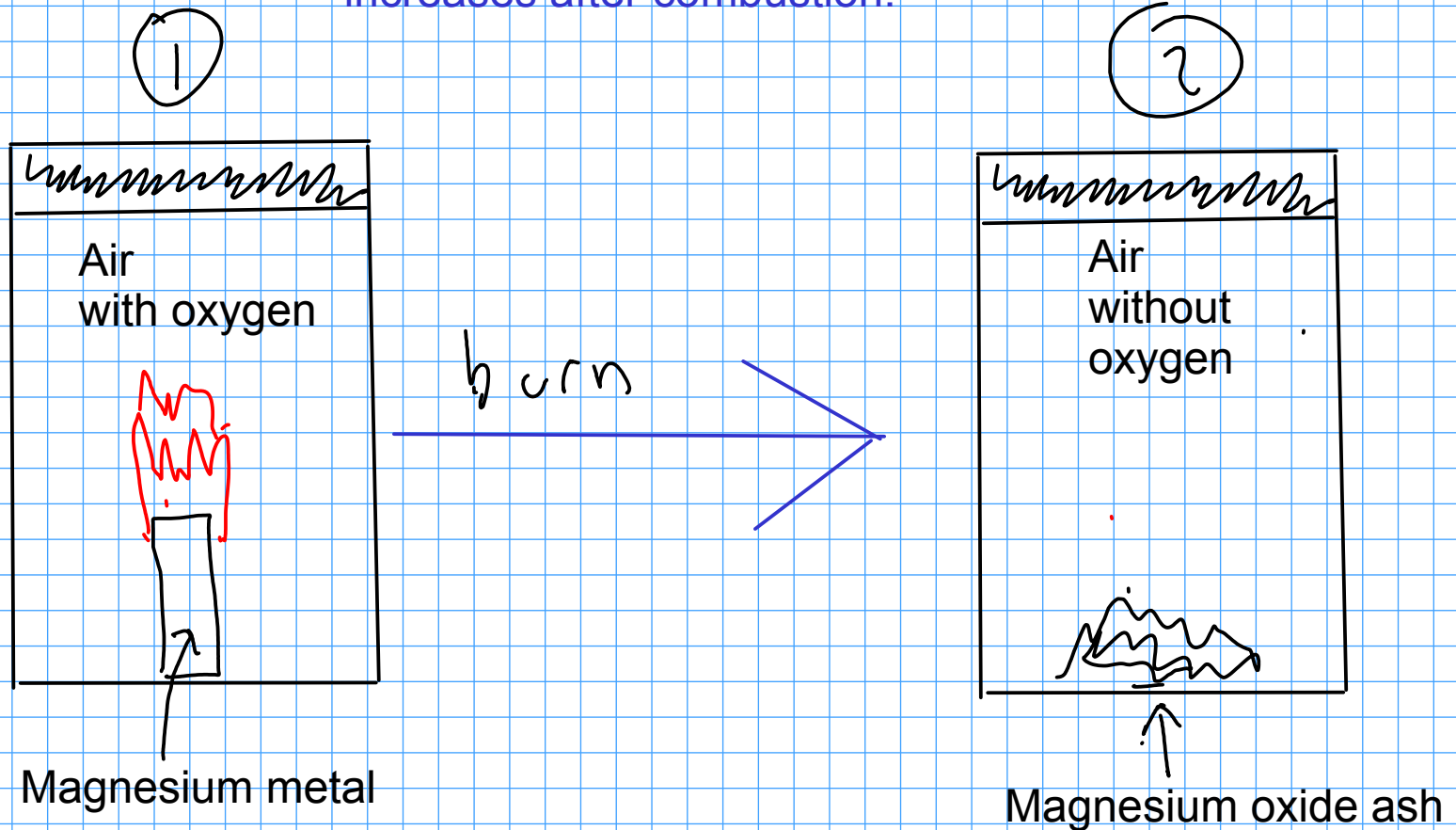
Summing up...



# Conservation of mass

- During any chemical or physical process, the overall amount of mass remains constant, even if the chemical identity or physical state of the matter involved changes

\* Total mass remains constant from (1) to (2), even though the mass of the GAS decreases and the mass of the SOLID increases after combustion!



Here are the answers to a few questions that were asked in class:

Round the answer to this calculation to the right number of sig figs:

$$\underbrace{0.065 \times 66.7}_{4.3355} + 1.002 = 5.3375$$

Multiplication rule first!

Then addition rule!

5.3

Perform this unit conversion:

$$55000 \mu\text{m} \text{ to } \text{m}$$
$$55000 \cancel{\mu\text{m}} \times \frac{10^{-6} \text{ m}}{\cancel{1 \mu\text{m}}} = 0.055 \text{ m}$$

Perform this unit conversion:

4,45 m to in

$$1 \text{ cm} = 10^{-2} \text{ m}$$

$$1 \text{ in} = 2.54 \text{ cm}$$

$$4.45 \text{ m} \times \frac{1 \text{ cm}}{10^{-2} \text{ m}} \times \frac{1 \text{ in}}{2.54 \text{ cm}} = 175 \text{ in}$$

$$175 \overline{) 196850394}$$

Round the final answer to three significant figures!  
(The initial measurement, which you converted by multiplying and dividing by EXACT NUMBERS, has three significant figures.)