Avogadro's Number

Sample Problems

Part A

① How many moles of magnesium is 1.25×10^{23} atoms?

$$1.25 \times 10^{23} \text{ atoms Mg} \times \frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ atoms}}$$

$$= 0.208 \text{ mol Mg}$$

② How many moles of NaCl is 1.45×10^{24} molecules?

$$1.45 \times 10^{24} \text{ molecules NaCl} \times \frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ molecules}}$$

$$= 2.41 \text{ mol NaCl}$$

* math: <u>multiply</u> by the number on <u>top</u> of the fraction
<u>divide</u> by the number on the <u>bottom</u> of the fraction

- the unit on the bottom of the fraction matches the unit on the number you start with

- the unit on the top of the faction matches the unit of your answer

Part B

③ How many atoms are in 1.72 moles of Al?

$$1.72 \text{ mol Al} \times \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mol}} = 1.04 \times 10^{24} \text{ atoms Al}$$

④ How many molecules of C_6H_{14} are in 2.46 moles?

$$2.46 \text{ mol } C_6H_{14} \times \frac{6.02 \times 10^{23} \text{ molecules}}{1 \text{ mol}} = 1.48 \times 10^{24} \text{ molecules } C_6H_{14}$$