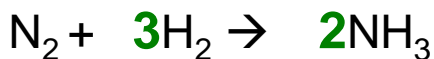


Problem 1 in class

Balance the following equation



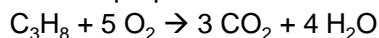
Problem 2 in class

Balance the following chemical equation,
the combustion of methane



Problem 3 in class

- Combustion of propane



Calculate how much CO_2 is produced when 2 L
of propane is burned

**Molar ratio propane C_3H_8 to CO_2 is 1:3, so
2 L C_3H_8 to 6 L CO_2
(make the ratios equal 1:3::2:6)**

Problem 4 in class

- Calculate the molar mass of propane C_3H_8
- assume molar mass of C = 12 g/mole
- assume molar mass of H = 1 g/mole

C_3 is 3×12 g/mole = 36 g/mole C

H_8 is 8×1 g/mole = 8 g/mole H

C_3H_8 is 36 g/mole + 8 g/mole = 44 g/mole

Problem 5 in class

132 g of propane is how many moles?

C_3H_8 is 44 g/mole

**$132 \text{ g} \div 44 \text{ g/mole} = 132 \text{ g} \times 1 \text{ mole}/44 \text{ g} =$
(divide by fraction is the same as multiply by reciprocal of fraction)***

3 moles propane

***included if you are having trouble following the first
part of the equation going to the answer, second part
not required to solve the problem, just a reminder
how dividing by fractions works**

Problem 6 $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

If 4 grams oxygen are consumed, how many

– Grams carbon consumed?

– Grams carbon dioxide produced?

Molar ratio is 1:1:1, so same number of moles of oxygen as
carbon as carbon dioxide...since they have different
masses, you need to determine how many moles is 4
grams of oxygen, and then figure how many grams of
the others is that many moles

$4 \text{ g O}_2 \div (32 \text{ g/mole}) = 0.125 \text{ moles O}_2$

$0.125 \text{ moles C} \times (12 \text{ g/mole}) = 1.5 \text{ g C}$

$0.125 \text{ moles CO}_2 \times (44 \text{ g/mole}) = 5.5 \text{ g CO}_2$