

Stoichiometry

how much do I:
have, need
or, make?

know ions
write formulas
cross over
balance eq.
find conv. factors
lim. analysis
units on answ.

1 mol H₂O = 2 mol H = 1 mol O
2 mol H₂O = 4 mol H = 2 mol O
4 mol H₂O = 8 mol H = 4 mol O
3 mol H₂O = 6 mol H = 3 mol O
2.5 mol H₂O = 5 mol H = 2.5 mol O

2 : 1
4 : 2
8 : 4
6 : 3
5 : 5 : 2.5

1 : 2 : 1
ratio
never
changes!!!

we can make
conversion
factors.

1 mol H₂O
2 mol H

1 mol H₂O
1 mol O

2 mol H
1 mol O

mol A
mol B mole
ratio!

Key to stoich!

find ALL the mole ratios for B₂(CO₃)₃

1 mol B₂(CO₃)₃
2 mol B

2 mol B
3 mol C

1 mol B₂(CO₃)₃
3 mol C

2 mol B
9 mol O

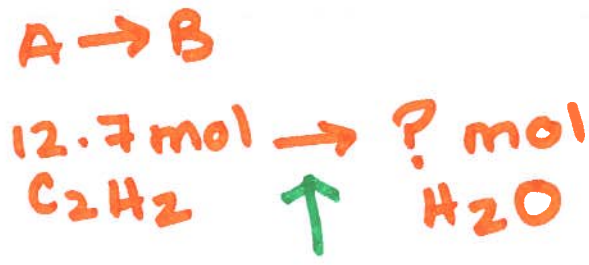
1 mol B₂(CO₃)₃
9 mol O

3 mol C
9 mol O



D How many moles of water can you make if you start with 12.7 moles of C₂H₂?

A = known
B = unknown



12.7 mol C ₂ H ₂	2 mol H ₂ O	= 12.7 mol H ₂ O
	2 mol C ₂ H ₂	

mole ratio $\frac{B}{A}$

$\frac{2 \text{ mol H}_2\text{O}}{2 \text{ mol C}_2\text{H}_2}$ } always comes from Balanced equation



$$\frac{16.4 \text{ mol A} \mid 4 \text{ mol B}}{5 \text{ mol A}} = 13.12 \text{ mol B}$$

$$\frac{B}{A} = \frac{4 \text{ mol CO}_2}{5 \text{ mol O}_2}$$

$$= 13.12 \text{ mol CO}_2$$

STEPS

- 1) Balance
- 2) figure out A & B
- 3) write out mole ratio $\frac{B}{A}$
- 4) dimensional analysis