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$$3 \text{ mole} \times 10 \text{ mole} = 2 \text{ mole}$$

$$\frac{30 \text{ mole}}{2 \text{ mole}} = (n) \frac{2 \text{ mole}}{2 \text{ mole}}$$

$$n = 15 \text{ mole}$$

## ★ Mole → mass conversion:

In this case mass of one substance will be given and mole can be calculated or mole will be given mass should be calculated by using chemical balance equation.

Chemist speaks

Example:

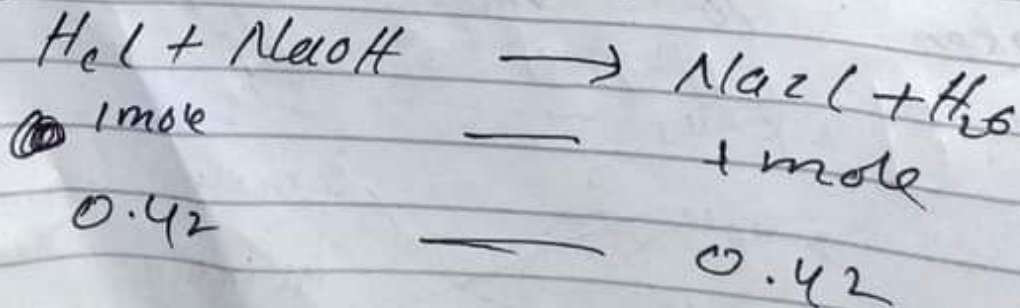
$$\text{Mass of HCl} = 15.5 \text{ g}$$

$$\text{No of mole NaCl} = ?$$

1st convert mass of HCl to its mole.

$$n = \frac{m}{M} \Rightarrow n = \frac{15.5}{36.5} = 0.42 \text{ mole}$$

Now



Example:

Mass of Al = 14.5g  
Mass of  $Al_2O_3$  = ?

Solution:



108g

14.5g

204g

n

Chemist speaks

$$\frac{n(108)}{108} = \frac{14.5 \times 204}{108} \Rightarrow 27g$$

Volume - Volume conversion:-

In this case volume of one of the reactant or product would be given and other would be wanted.

Example: Given data:

Volume of HCl = 10 dm<sup>3</sup>

Volume of Chlorine = ?

P.T.O