

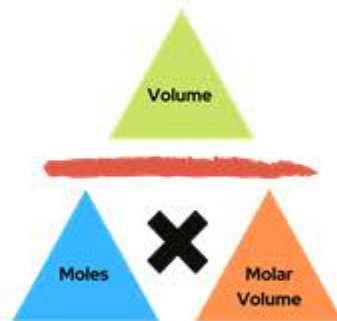
We know the mole ratio of CaCO_3 and CO_2 from our balanced equation.

CaCO_3	CO_2
1	1

Number of mol of CO_2 gas produced

5

At room temperature and pressure one mole of any gas (the molar volume) has a volume of 24000 cm^3 . This is Avogadro's law!



Use the mole triangle. Just block off what you are trying to find and the triangle gives the equation.

We are trying to find the Volume of CO_2 gas produced at r.t.p

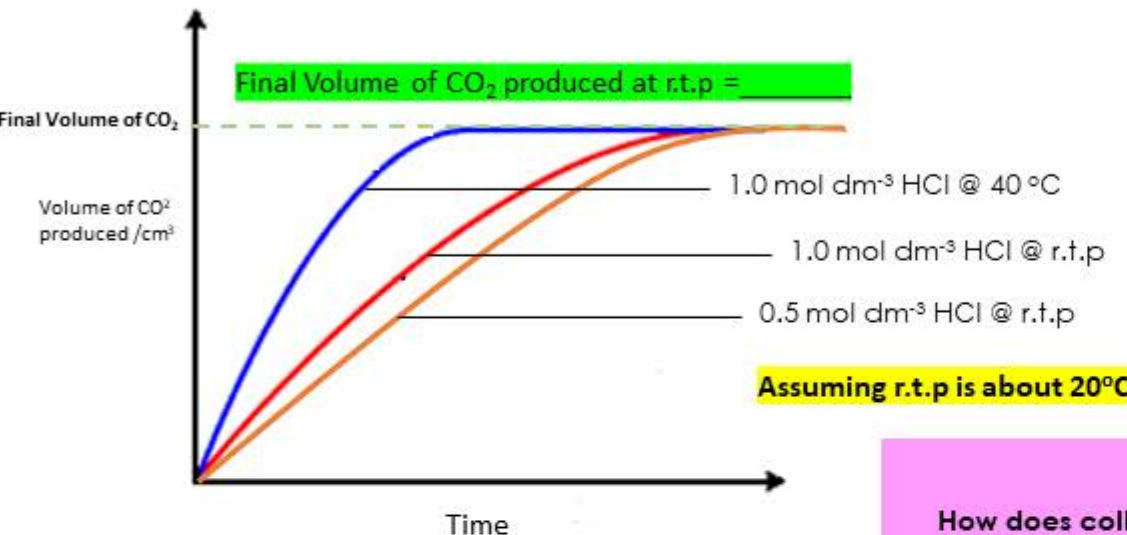
Therefore the Volume of CO_2 produced at r.t.p in this reaction =

X

6

=

Volume of CO_2 produced



B and C are comparing the effect of Temperature on reaction rate

A and B are comparing the effect of concentration on reaction rate

Assuming r.t.p is about 20°C

How does collision theory explain the effect of Temp and Conc. On reaction rate?

2 Finding the Volume of CO_2 produced at r.t.p

CaCO_3 is the limiting reagent since the acid is in excess. The volume of CO_2 produced is dependent on the amount (number of moles of CaCO_3) which reacted.

CALCULATE THE NUMBER OF MOLES OF CaCO_3 used in this experiment

Mass of CaCO_3 used / Molar mass of CaCO_3

$1\text{g} / \text{[] g mol}^{-1}$

=

3 Calculate the Molar Mass of CaCO_3

4 Calculate the number of moles of CaCO_3