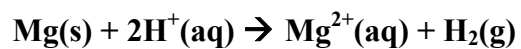|	Marks
• In an experiment, 5.0 g of magnesium was dissolved in excess hydrochloric acid to give magnesium ions and hydrogen gas. Write a balanced equation for the reaction that occurred.	3

Mg(s) + 2H$^+$(aq) → Mg^{2+}(aq) + H$_2$(g)

What amount of hydrogen gas (in mol) is produced in the reaction?

The molar mass of Mg is 24.31 g mol^{-1}. 5.0 g therefore corresponds to:

number of moles = mass / molar mass = 5.0 g / 24.31 g mol^{-1} = 0.21 mol

From the chemical equation, each mol of Mg that reacts will give one mol of H$_2$. Hence,

number of moles of H$_2$ = 0.21 mol.

Answer: **0.21 mol**