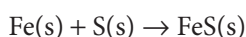


# Worksheet 6.3

## Reacting masses

- 1** The black solid iron(II) sulfide is formed when iron and sulfur react together. ( $A_r$  values: Fe = 56, S = 32)



- a** How many grams of sulfur will react with 56 g of iron?

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- b** If 7 g of iron and 10 g of sulfur are used, which substance is in excess?

.....

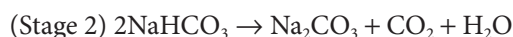
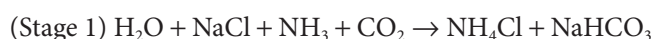
- c** If 7 g of iron and 10 g of sulfur are used, name the substances present when the reaction is complete, and give the mass of each.

.....

- d** What mass of iron will react completely with 10 g of sulfur?

.....

- 2** Sodium carbonate,  $\text{Na}_2\text{CO}_3$ , is an important chemical used in many industrial processes, one of which is making glass. Sodium carbonate is made from salt, using a method called the Solvay process. This method has two steps:



- a** The first equation would have to be doubled to produce  $2\text{NaHCO}_3$  (2 moles of sodium hydrogencarbonate).

Rewrite the first equation to show the quantities of all the chemicals that would have to react to give this much sodium hydrogencarbonate.

.....

- b** How many moles of sodium carbonate could be made from 100 moles of salt?

.....

- c** How many moles of carbon dioxide are required when 4 moles of salt react to form sodium carbonate?

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d How many grams of salt would be needed to make 318 g of sodium carbonate?

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