

CALCULATING AN EMPIRICAL FORMULA

Paper: 1C
Question: 9(a)

Example 1

Your mark

(a) Show, by calculation, that the empirical formula of this compound is CBrF_3

(2)

Mass
mole

$$\frac{8.05}{12} = 0.67 \text{ moles}$$

$$2 \div 0.67 = 3$$

$$\frac{53.69}{80} = 0.67 \text{ moles}$$

$$\frac{38.26}{19} = 2 \text{ moles}$$

Example 2

Your mark

(a) Show, by calculation, that the empirical formula of this compound is CBrF_3

(2)

~~$\text{C} + \text{Br} + \text{F} + \text{F} + \text{F}$~~
 ~~$8.05 + 53.69 + 38.26 + 38.26 + 38.26 =$~~

Mass
mole

	C	Br	F
Mass	8.05	53.69	38.26
MF	12	80	19
mole	0.67083	0.671125	2.013684
Ratio	1	1	3

$\leftarrow \div 0.67083$



Example 3

Your mark

(a) Show, by calculation, that the empirical formula of this compound is CBrF_3

(2)

$$\text{C} = \frac{8.05}{12}$$

$$\text{Br} = \frac{53.69}{80}$$

$$\text{F} = \frac{38.26}{19}$$

$$= 0.67083$$

$$= 0.671125$$

$$= 2.013684$$

$$= 1$$

$$= 1$$

$$= 3$$



$$\text{C} = 1$$

$$\text{Br} = 1$$

$$\text{F} = 3$$