

Solutions

Each answer shows the steps, then the **result**.

2.1

- $16/18 \times 100 \approx 89\%$

2.2

- The simplest whole-number ratio of atoms

2.3

- $n = 90/30 = 3$

2.4

- $2 : 3$ (multiply both by 2)

3.1 B

- the simplest whole-number ratio of atoms

3.2 C

- C: $75/12 = 6.25$, H: $25/1 = 25$; ratio $1 : 4$, so CH_4

3.3

(a)

- Per 100 g: S = $40/32 = 1.25$, O = $60/16 = 3.75$ mol; divide by 1.25: S 1, O 3; empirical formula SO_3

(b)

- Convert mass percents to moles and divide by the smallest

3.4

(a)

- $n = 56/14 = 4$

(b)

- C_4H_8