

1 2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

1

H

hydrogen

1

|   |   |          |   |
|---|---|----------|---|
| 1 | H | hydrogen | 1 |
|---|---|----------|---|

|     |            |               |     |     |       |            |               |     |     |           |           |    |
|-----|------------|---------------|-----|-----|-------|------------|---------------|-----|-----|-----------|-----------|----|
| 7   | <b>Li</b>  | lithium       | 3   | 4   | 9     | <b>Be</b>  | beryllium     | 4   | 20  | <b>Ne</b> | neon      | 10 |
| 23  | <b>Na</b>  | sodium        | 11  | 12  | 24    | <b>Mg</b>  | magnesium     | 12  | 39  | <b>K</b>  | potassium | 19 |
| 39  | <b>Ca</b>  | calcium       | 20  | 21  | 40    | <b>Sc</b>  | scandium      | 21  | 45  | <b>Ti</b> | titanium  | 22 |
| 51  | <b>V</b>   | vanadium      | 23  | 24  | 52    | <b>Cr</b>  | chromium      | 24  | 55  | <b>Mn</b> | manganese | 25 |
| 73  | <b>Fe</b>  | iron          | 26  | 27  | 56    | <b>Co</b>  | cobalt        | 27  | 59  | <b>Ni</b> | nickel    | 28 |
| 93  | <b>Cu</b>  | copper        | 29  | 30  | 63.5  | <b>Zn</b>  | zinc          | 30  | 65  | <b>Ga</b> | gallium   | 31 |
| 101 | <b>Ag</b>  | silver        | 47  | 48  | 108   | <b>Cd</b>  | cadmium       | 48  | 112 | <b>In</b> | indium    | 49 |
| 103 | <b>Rh</b>  | rhodium       | 45  | 46  | 106   | <b>Pd</b>  | palladium     | 46  | 110 | <b>Ag</b> | silver    | 47 |
| 103 | <b>Ru</b>  | ruthenium     | 44  | 45  | 101   | <b>Rh</b>  | rhodium       | 45  | 103 | <b>Pd</b> | palladium | 46 |
| 103 | <b>Tc</b>  | technetium    | 43  | 44  | [98]  | <b>Tc</b>  | technetium    | 43  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Mo</b>  | molybdenum    | 42  | 43  | 96    | <b>Mo</b>  | molybdenum    | 42  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Nb</b>  | niobium       | 41  | 42  | 93    | <b>Nb</b>  | niobium       | 41  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Zr</b>  | zirconium     | 40  | 41  | 91    | <b>Zr</b>  | zirconium     | 40  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Y</b>   | yttrium       | 39  | 40  | 89    | <b>Y</b>   | yttrium       | 39  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>La*</b> | lanthanum     | 57  | 58  | 139   | <b>La*</b> | lanthanum     | 57  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Ba</b>  | barium        | 56  | 57  | 137   | <b>Ba</b>  | barium        | 56  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Cs</b>  | caesium       | 55  | 56  | 133   | <b>Cs</b>  | caesium       | 55  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Ra</b>  | radium        | 88  | 89  | [226] | <b>Ra</b>  | radium        | 88  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Fr</b>  | francium      | 87  | 88  | [223] | <b>Fr</b>  | francium      | 87  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Ac*</b> | actinium      | 89  | 90  | [227] | <b>Ac*</b> | actinium      | 89  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Rf</b>  | rutherfordium | 104 | 105 | [261] | <b>Rf</b>  | rutherfordium | 104 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Db</b>  | dubnium       | 105 | 106 | [262] | <b>Db</b>  | dubnium       | 105 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Sg</b>  | seaborgium    | 106 | 107 | [266] | <b>Sg</b>  | seaborgium    | 106 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Bh</b>  | bohrium       | 107 | 108 | [265] | <b>Bh</b>  | bohrium       | 107 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Hs</b>  | hassium       | 108 | 109 | [277] | <b>Hs</b>  | hassium       | 108 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Mt</b>  | meitnerium    | 109 | 110 | [268] | <b>Mt</b>  | meitnerium    | 109 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Ds</b>  | darmstadtium  | 110 | 111 | [271] | <b>Ds</b>  | darmstadtium  | 110 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Rg</b>  | roentgenium   | 111 | 112 | [272] | <b>Rg</b>  | roentgenium   | 111 | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Hg</b>  | mercury       | 80  | 81  | 201   | <b>Hg</b>  | mercury       | 80  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Tl</b>  | thallium      | 81  | 82  | 204   | <b>Tl</b>  | thallium      | 81  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Pb</b>  | lead          | 82  | 83  | 207   | <b>Pb</b>  | lead          | 82  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Bi</b>  | bismuth       | 83  | 84  | 209   | <b>Bi</b>  | bismuth       | 83  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Po</b>  | polonium      | 84  | 85  | [209] | <b>Po</b>  | polonium      | 84  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>At</b>  | astatine      | 85  | 86  | [210] | <b>At</b>  | astatine      | 85  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Rn</b>  | radon         | 86  | 87  | [222] | <b>Rn</b>  | radon         | 86  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Xe</b>  | xenon         | 54  | 55  | 131   | <b>Xe</b>  | xenon         | 54  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>I</b>   | iodine        | 53  | 54  | 127   | <b>I</b>   | iodine        | 53  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Te</b>  | tellurium     | 52  | 53  | 128   | <b>Te</b>  | tellurium     | 52  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Br</b>  | bromine       | 35  | 36  | 80    | <b>Br</b>  | bromine       | 35  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Kr</b>  | krypton       | 36  | 37  | 84    | <b>Kr</b>  | krypton       | 36  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Se</b>  | selenium      | 34  | 35  | 79    | <b>Se</b>  | selenium      | 34  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>As</b>  | arsenic       | 33  | 34  | 75    | <b>As</b>  | arsenic       | 33  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>S</b>   | sulfur        | 16  | 17  | 32    | <b>S</b>   | sulfur        | 16  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>Cl</b>  | chlorine      | 17  | 18  | 35.5  | <b>Cl</b>  | chlorine      | 17  | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>O</b>   | oxygen        | 8   | 9   | 16    | <b>O</b>   | oxygen        | 8   | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>F</b>   | fluorine      | 9   | 10  | 19    | <b>F</b>   | fluorine      | 9   | 103 | <b>Rh</b> | rhodium   | 45 |
| 103 | <b>He</b>  | helium        | 2   | 3   | 4     | <b>He</b>  | helium        | 2   | 103 | <b>Rh</b> | rhodium   | 45 |

# Interpreting a Chemical Formula

1. Interpreting a chemical formula is an essential skill for GCSE Chemistry.

a. State the number of atoms of each element in the following compounds.



Number of potassium atoms =

Number of chlorine atoms =



Number of sodium atoms =

Number of oxygen atoms =



Number of calcium atoms =

Number of sulfur atoms =

Number of oxygen atoms =

b. Use the periodic table to identify the elements in the compounds below.

Then use the formula to work out the numbers of atoms of each element.



c. The formulas shown below have brackets.

Work out the elements and the number of atoms of each element.

