

## 5 Mensuration

### 5.1 Units of measure

Use metric units of mass, length, area, volume and capacity in practical situations and convert quantities into larger or smaller units.

#### Notes and examples

Units include:

- mm, cm, m, km
- $\text{mm}^2$ ,  $\text{cm}^2$ ,  $\text{m}^2$ ,  $\text{km}^2$
- $\text{mm}^3$ ,  $\text{cm}^3$ ,  $\text{m}^3$
- ml, l
- g, kg .

Conversion between units includes:

- between different units of area, e.g.  $\text{cm}^2 \leftrightarrow \text{m}^2$
- between units of volume and capacity, e.g.  $\text{m}^3 \leftrightarrow \text{litres}$ .

### 5.2 Area and perimeter

Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium.

#### Notes and examples

Except for the area of a triangle, formulas are **not** given.

### 5.3 Circles, arcs and sectors

- 1 Carry out calculations involving the circumference and area of a circle.
- 2 Carry out calculations involving arc length and sector area as fractions of the circumference and area of a circle.

#### Notes and examples

Answers may be asked for in terms of  $\pi$ .  
Formulas are given in the List of formulas.

Includes minor and major sectors.

### 5.4 Surface area and volume

Carry out calculations and solve problems involving the surface area and volume of a:

- cuboid
- prism
- cylinder
- sphere
- pyramid
- cone.

#### Notes and examples

Answers may be asked for in terms of  $\pi$ .

The following formulas are given in the List of formulas:

- curved surface area of a cylinder
- curved surface area of a cone
- surface area of a sphere
- volume of a prism
- volume of a pyramid
- volume of a cylinder
- volume of a cone
- volume of a sphere.

The term prism refers to any solid with a uniform cross-section, e.g. a cylindrical sector.

## 5 Mensuration (continued)

### 5.5 Compound shapes and parts of shapes

### Notes and examples

1 Carry out calculations and solve problems involving perimeters and areas of:

- compound shapes
- parts of shapes.

Answers may be asked for in terms of  $\pi$ .

2 Carry out calculations and solve problems involving surface areas and volumes of:

- compound solids
- parts of solids.

e.g. find the surface area and volume of a frustum.