|  | Volume of a sphere: | $V=\frac{4}{3} \pi r^{3}$ | Note that the formulae for volume of a cube, |
| :--- | :--- | :--- | :--- |
| $\frac{\text { v }}{3}$ | Volume of a cone: | $V=\frac{1}{3} \pi r^{2} h$ | cuboid and other types of prisms are not given |
| Volume of a pyramid: | $V=\frac{1}{3} A h$ | on the formula list. These must be learned. |  |

Calculate each volume, where appropriate rounded to 1 decimal place.

Q1 Cube: side length 5 cm
Q2 Cuboid: length 1 cm , breadth 4 mm , height 3 mm (Hint: convert 1 cm to mm first)
Q3 Cylinder: radius 7 cm , height 5 cm
Q4 Triangular prism: triangle base 10 cm , triangle height 40 cm , vertical height of prism 15 cm
Q5 Prism with an irregular shaped base: base area $43 \mathrm{~cm}^{2}$, height 6 cm .
Q6 Sphere: radius 1.55 metres
Q7 Hemisphere: diameter 10.4 mm (Hint: halve the diameter to find the radius first)
Q8 Cone: radius 8.2 cm , height 9.8 cm
Q9 Square-based pyramid: base length 12 metres, vertical height 6.2 metres
Q10 Rectangular-based pyramid: base length 6 cm , base breadth 5 cm , vertical height 8 cm
Q11 Irregular-based pyramid: base area $44 \mathrm{~cm}^{2}$, vertical height of pyramid 9.6 cm

Given each volume, work backwards to find the required length.

Q12 Cuboid with volume $336 \mathrm{~cm}^{3}$, length 8 cm and breadth 6 cm . Calculate its height.
Q13 Cylinder with volume $199.5 \mathrm{~cm}^{3}$ and radius 4.2 cm . Calculate its height, to 1 decimal place.
Q14 Cylinder with volume $8158 \mathrm{~mm}^{3}$ and height 16.1 mm . Calculate its radius, to 1 decimal place.
Q15 Prism with volume $2754 \mathrm{~cm}^{3}$ and height 17 cm . Calculate the area of its base.
Q16 Sphere with volume $142.5 \mathrm{~m}^{3}$. Calculate its radius, to the nearest centimetre.
Q17 Hemisphere with volume $1971.2 \mathrm{~mm}^{3}$. Calculate its radius, to 1 decimal place.
Q18 Cone with volume $5.63 \mathrm{~cm}^{3}$ and radius 1.6 cm . Calculate its height, to the nearest millimetre.
Q19 Cone with volume $87.2 \mathrm{~mm}^{3}$ and height 6.8 mm . Calculate its radius, to 1 decimal place.
Q20 Square-based pyramid with volume $66 \mathrm{~m}^{3}$ and height 5.5 m . Calculate the length of its base

