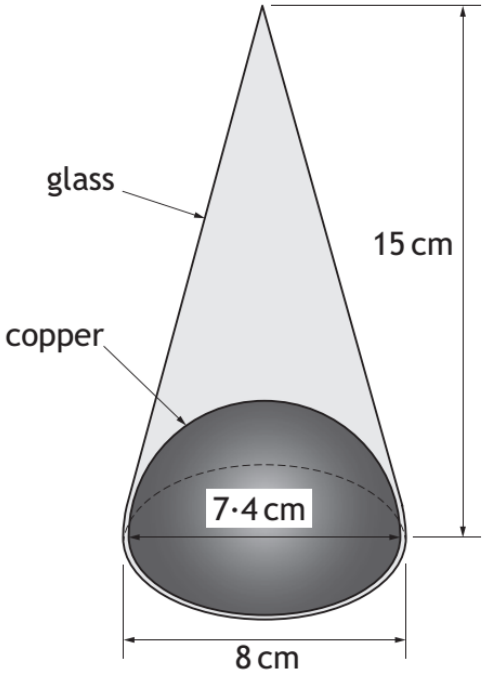
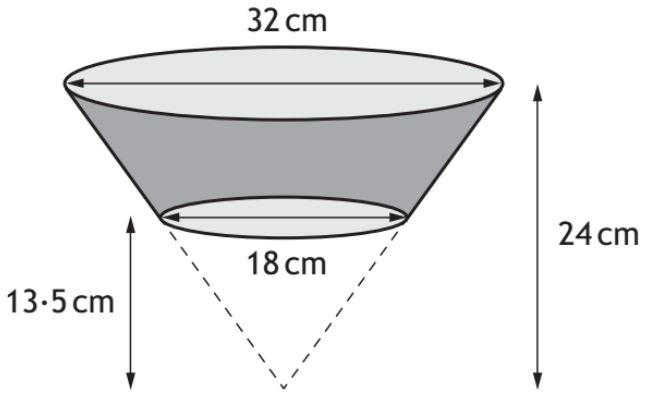
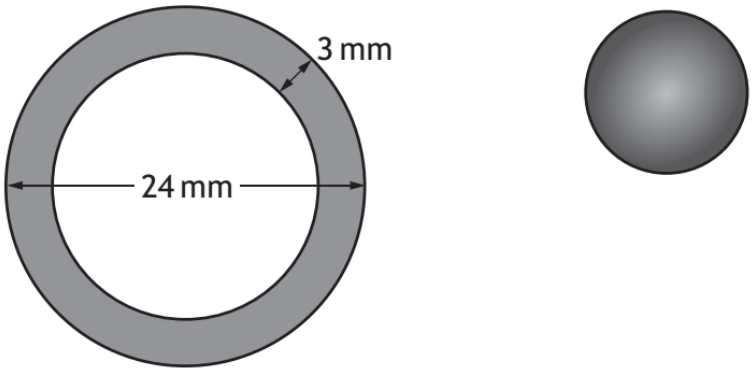
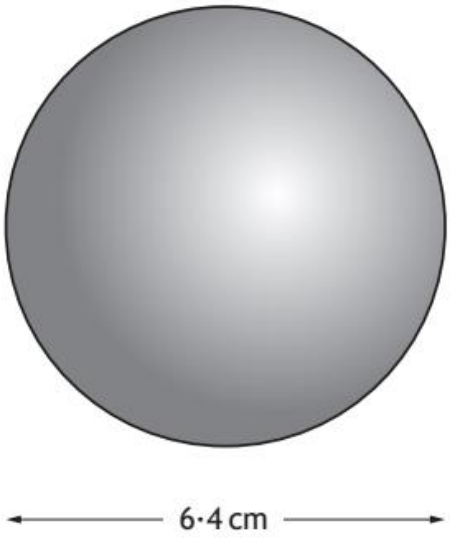
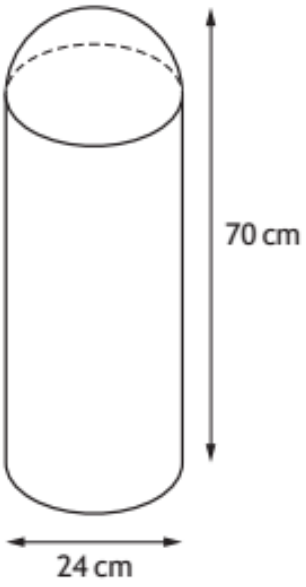
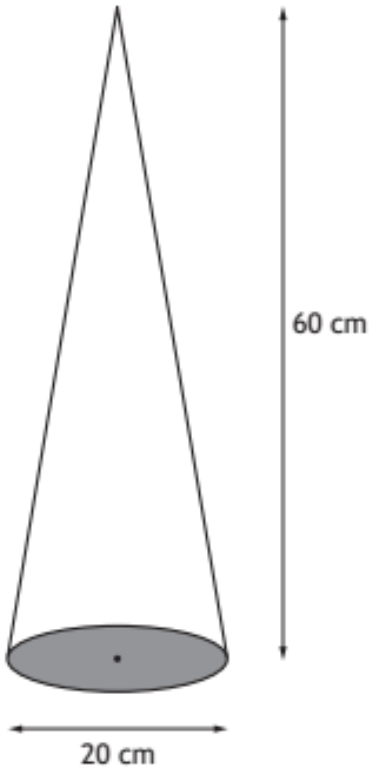
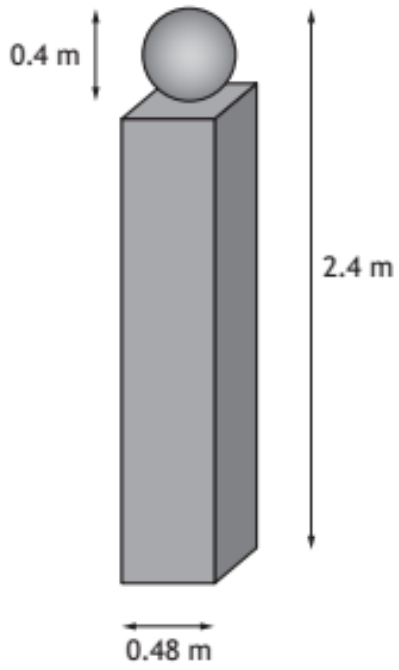
Volume

YEAR	PAPER	QUESTION
2014	2	An ornament is in the shape of a cone with diameter 8 centimetres and height 15 centimetres. The bottom contains a hemisphere made of copper with diameter 7·4 centimetres. The rest is made of glass, as shown in the diagram below.  Calculate the volume of the glass part of the ornament. Give your answer correct to 2 significant figures. **5**
2014	2	(a) The Earth is approximately spherical with a radius of 6400 kilometres. Calculate the volume of the Earth giving your answer in scientific notation, correct to 2 significant figures.  **3** (b) The approximate volume of the Moon is $2{\cdot}2 \times 10^{10}$ cubic kilometres. Calculate how many times the Earth's volume is greater than the Moon's. **2**

2016	2	A carton is in the shape of a large cone with a small cone removed. The large cone has diameter of 32 cm and height 24 cm. The small cone has diameter of 18 cm and height 13·5 cm.  Calculate the volume of the carton. **Give your answer correct to 2 significant figures.** **5**
2017	2	A spherical sweet is made by coating a caramel sphere evenly with chocolate. A cross-section of the sweet is shown below.  The diameter of the sweet is 24 millimetres and the thickness of the chocolate coating is 3 millimetres. Calculate the volume of the chocolate coating. **5** **Give your answer correct to 3 significant figures.**

2018	2	A toy company makes juggling balls in the shape of a sphere with a diameter of 6·4 centimetres.  Calculate the volume of one juggling ball. **Give your answer correct to 2 significant figures.** **3**
2019	2	A traffic bollard is in the shape of a cylinder with a hemisphere on top. The bollard has • diameter 24 centimetres • height 70 centimetres.  Calculate the volume of the bollard. Give your answer correct to 3 significant figures. **5**

2022	1	The diagram below shows a cone with diameter 20 centimetres and height 60 centimetres.  Calculate the volume of the cone. **2** **Take $\pi = 3.14$.**
2022	2	A concrete gatepost is made in the shape of a cuboid with a sphere on top.  The sphere has diameter 0.4 metres. The cuboid has a square base of length 0.48 metres. The total height of the gatepost is 2.4 metres. Calculate the volume of concrete needed to make a gatepost. **3**