Use the $\pi$ key unless a question says otherwise. Give answers to one decimal place where they are not exact.

**1** A cuboid measures $8$ cm by $5$ cm by $2$ cm.

(a) Find its volume using the $8 \times 5$ face as the cross-section (2)

(b) Find its volume using the $5 \times 2$ face as the cross-section (2)

(c) **Explain why the two answers are the same.** (2)

**(6 marks)**

**2** Which of these prisms have a volume greater than $100$ cm$^3$? **Show your working for each.**

(a) a prism with a parallelogram cross-section of base $5$ cm and height $3$ cm, length $7$ cm (2)

(b) a triangular prism with base $8$ cm, height $6$ cm, length $2$ cm (2)

(c) a cuboid $5$ cm by $2.3$ cm by $9$ cm (2)

**(6 marks)**

**3** Two cylinders have the same volume. The first has radius $6$ cm and height $4$ cm.

(a) Find the volume of the first (2)

(b) The second has radius $3$ cm. **Find its height.** (3)

**(5 marks)**