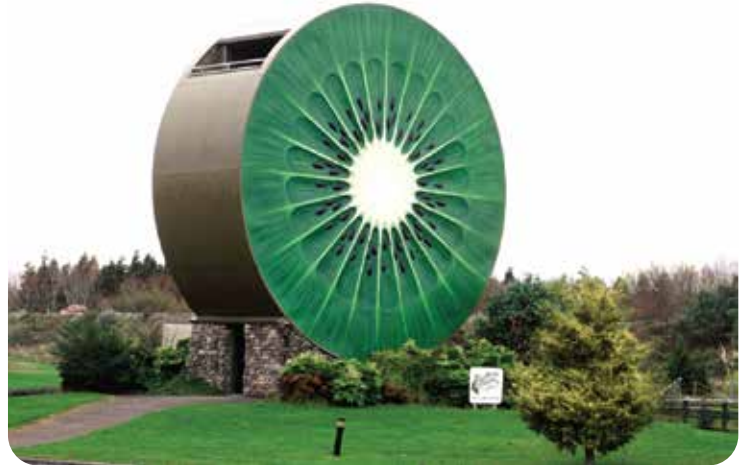
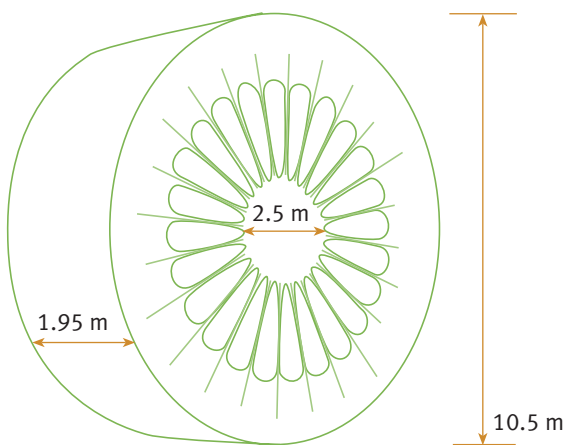


# Colossal Kiwifruit

You need: a calculator

## ACTIVITY ONE

Te Puke calls itself the kiwifruit capital of the world. It even has a kiwifruit festival. South of the town, there is a large model of a slice of kiwifruit. It has two green circular faces, each with a white “core”, and a brown “skin” around the outside. The diameter of each circular face is 10.5 metres, the diameter of the core is 2.5 metres, and the “slice” is 1.95 metres thick.



Circumference of a circle =  $\pi d$  or  $2\pi r$

Area of a circle =  $\pi r^2$

Volume of a cylinder =  $\pi r^2 h$

Give answers for questions 1–4 correct to 3 significant figures.

1.
  - a. Find the circumference of the circular face.
  - b. Use the circumference to find the area of the skin in square metres.
2. Find the area in square metres of:
  - a. one of the circular faces
  - b. one of the white core sections.
3. You have been contracted to repaint the model. Paint covers about 12 square metres per litre.
  - a. How much brown paint is needed to give the skin 2 coats of paint?
  - b. How much white paint is needed to give the core on each side 2 coats?
  - c. How much green paint is needed to give each of the faces 2 coats?



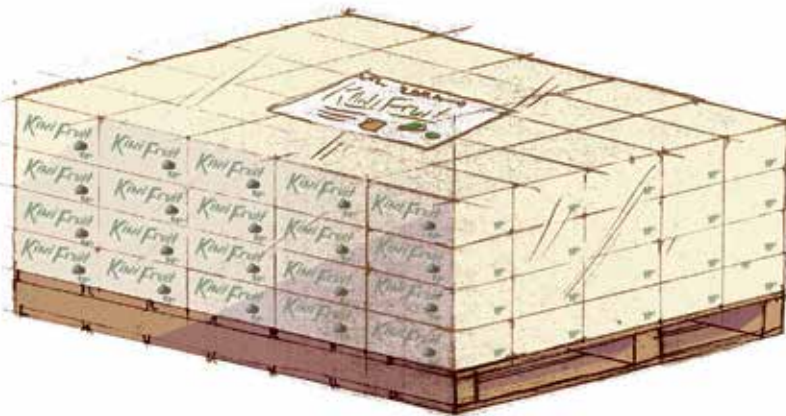
4. a. What is the mathematical name for the shape of the giant kiwifruit slice?
  - b. What is the volume of the giant kiwifruit slice?

1. When kiwifruit are exported, about 60 percent of them are sent in 10 kilogram packs. The dimensions of the packs are:



Each measurement is  $\pm 1$  millimetre.

- a. In cubic millimetres, what is the smallest volume a pack can have?
- b. In cubic millimetres, what is the largest volume a pack can have?



2. The packs are stacked onto pallets. Each pallet holds 100 packs. One particular shipment to Japan consists of 2 500 pallets. 58 percent of the kiwifruit in the pallets are in 10 kilogram packs.
  - a. How many tonnes of fruit in this shipment are being sent in 10 kilogram packs?
  - b. Find the total volume of the 10 kilogram packs in cubic metres.

1 tonne = 1 000 kilograms

