



Roof garden

Anil moves into a small flat in Manchester. The flat has a roof garden. Anil makes a scale drawing of the new design for his roof garden.

The garden will have wooden fencing on three sides. There will also be five large plant pots, each 1 m high.

Question bank

- 1 What is the total length of fencing that Anil needs to buy?
- 2 What is the cost of the circular plant pot that Anil wants?

Anil is going to cover the sides of all the plant pots with a bamboo covering. He is then going to fill the pots with compost, leaving a 10 cm gap at the top.

- 3 What length of bamboo covering does Anil need to go around one of the square plant pots?
- 4 How much compost does Anil need for one of the square plant pots?

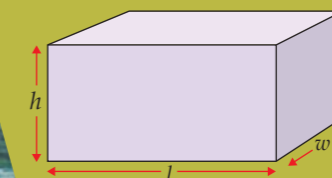
Anil says, 'The total cost of the pots, bamboo, compost and fencing is just under £1200.'

- 5 Is Anil correct? Use π on your calculator and show working to support your answer.

Information bank

Haroldston garden centre price list

Plant pots (1 m high)	square 1 m × 1 m	£49
	square 1.2 m × 1.2 m	£59
	square 1.4 m × 1.4 m	£69
	rectangular 1 m × 2 m	£49
	rectangular 1 m × 2.5 m	£69
	rectangular 1.2 m × 2.5 m	£89
	circular pot, radius 0.9 m	£99
	circular pot, radius 1.1 m	£119
	circular pot, radius 1.3 m	£139
Fencing	wooden	£9 per metre
	wire	£7 per metre
Bamboo	roll (0.5 m high)	£3.50 per metre
	roll (1 m high)	£5.50 per metre
	roll (1.5 m high)	£7.50 per metre
Compost	200 litre bag	£8.95



$$\text{Perimeter of a rectangle} = 2(l + w)$$

$$\text{Area of a rectangle} = lw$$

$$\text{Volume of a cuboid} = lwh$$

$$\text{Perimeter of a circle} = 2\pi r$$

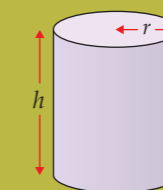
$$\text{Area of a circle} = \pi r^2$$

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

$$1 \text{ cm}^3 = 1 \text{ ml}$$

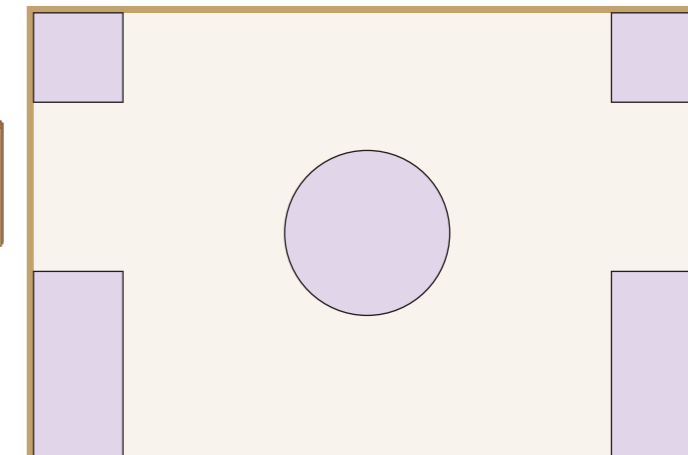
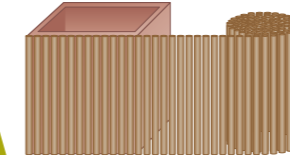
$$1000 \text{ ml} = 1 \text{ litre}$$

$$1000 \text{ litres} = 1 \text{ m}^3$$



Scale drawing of roof garden

Scale
1 cm = 1 m



Key: Fence Plant pots