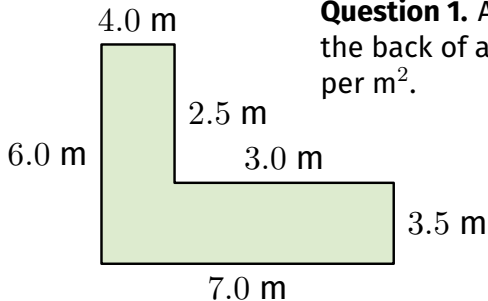


# An L-Shaped Deck



*Split the deck into the two rectangles shown by the dashed line, then answer parts (a)-(d) in order.*



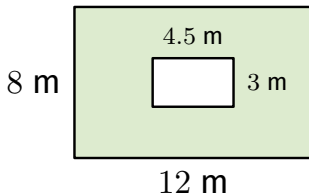
**Question 1.** A new L-shaped deck is being built at the back of a house. Composite decking costs \$86 per  $\text{m}^2$ .

- (a) Calculate the area of the bottom rectangle (bottom width  $\times$  right height).
- (b) Calculate the area of the top-left rectangle (top width  $\times$  inner drop).
- (c) Calculate the total area of the deck.
- (d) Calculate the total cost of the decking.

# Turfing a Lawn



*The garden bed is not turfed – its area must be subtracted from the lawn's area.*



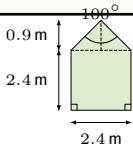
**Question 2.** A rectangular lawn measures 12 m by 8 m. A rectangular garden bed measuring 4.5 m by 3 m sits inside the lawn and will not be turfed. New turf costs \$18 per  $\text{m}^2$ , and can only be bought in whole square metres.

- (a) Calculate the area of the whole rectangular lawn.
- (b) Calculate the area of the garden bed that will not be turfed.
- (c) Calculate the area of lawn that needs new turf.
- (d) Turf can only be bought in whole square metres. How many square metres must be bought, and what is the total cost?

# Painting a Shed Wall



*The wall is a square with a triangular gable above it – find each area, then add them.*



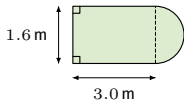
**Question 3.** A garden shed's front wall is a 2.4 m square with a triangular gable roof section 0.9 m tall above it. The wall needs 2 coats of paint, and one tin covers  $6 \text{ m}^2$  per coat.

- (a) Calculate the area of the square section and the triangular gable section.
- (b) Calculate the total wall area to be painted.
- (c) Calculate the total area of paint coverage needed for 2 coats, then find how many tins are needed (only whole tins can be bought).
- (d) Each tin costs \$45. Find the total cost of the paint.

# A Running-Track Garden Bed



*The garden bed is a rectangle with a semicircular end – add the two areas for the total.*



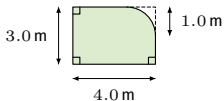
**Question 4.** A garden bed shaped like a running track (a rectangle with a semicircular end) has a straight section 3.0 m long and 1.6 m wide (the semicircular end has the same 1.6 m diameter). Soil costs \$22 per  $\text{m}^2$ , and edging strip is sold in 1 m lengths at \$9 each.

- (a) Calculate the area of each section, then the total area.
- (b) Calculate the cost of the soil.
- (c) Calculate the perimeter of the garden bed, correct to 2 decimal places.
- (d) How many 1 m lengths of edging are needed, and what is the total cost?

# A Rounded-Corner Deck



Read the scenario, then answer parts (a)-(d) in order.



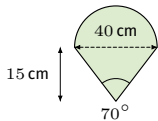
**Question 5.** A rectangular deck measuring 4.0 m by 3.0 m has one corner rounded off with a radius of 1.0 m for safety. Composite decking costs \$92 per  $\text{m}^2$ , and edge trim costs \$11 per metre (sold continuously).

- (a) Calculate the area of the decking needed (the rectangle's area, minus the missing corner square, plus the quarter-circle that replaces it).
- (b) Calculate the total cost of the decking.
- (c) Calculate the perimeter of the deck (the straight edges plus the quarter-circle arc), correct to 2 decimal places.
- (d) Calculate the cost of the edge trim.

# Plant Marker Signs



*Find the area of one sign in  $\text{cm}^2$  first, then convert to  $\text{m}^2$  before pricing.*



**Question 6.** A school garden orders 25 identical plant-marker signs, each shaped like a semicircle with a triangular point (a semicircular top on a triangular base). Each sign has a 40 cm diameter and a 15 cm triangular point depth. Acrylic material costs \$45 per  $\text{m}^2$ .

- (a) Calculate the area of the semicircular section and the triangular point of one sign, in  $\text{cm}^2$ .
- (b) Convert the area of one sign to  $\text{m}^2$  (divide by 10 000), then find the total area needed for 25 signs.
- (c) Calculate the total cost of the acrylic.