

Painting a Wall



Read the scenario, then answer parts (a)-(c) in order – each part uses your answer from the one before.

2.4 m



5.5 m

Question 1. A bedroom wall measures 5.5 m by 2.4 m and needs one coat of paint.

(a) Calculate the area of the wall.

Solution $\text{Area} = 5.5 \times 2.4 = 13.2 \text{ m}^2$.

(b) One tin of paint covers 10 m^2 . How many tins are needed?

Solution $13.2 \div 10 = 1.32$ tins. Only whole tins can be bought, so round UP: 2 tins.

(c) Each tin costs \$69. Find the total cost of the paint.

Solution $2 \times \$69 = \138.00 .

Fencing a Garden



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

3.2 m



6.5 m

Question 2. A rectangular vegetable garden measures 6.5 m by 3.2 m. It will be fenced on all four sides at \$18 per metre, with a 1 m wide gate (bought separately, no fencing needed across it) fitted in one side.

(a) Calculate the perimeter of the garden.

Solution Perimeter = $2(6.5 + 3.2) = 2 \times 9.7 = 19.4$ m.

(b) Find the length of fencing actually needed, once the 1 m gate gap is removed.

Solution $19.4 - 1 = 18.4$ m of fencing.

(c) Calculate the cost of the fencing.

Solution $18.4 \times \$18 = \331.20 .

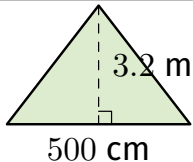
(d) The gate costs \$85. Find the total cost of the fencing project.

Solution $\$331.20 + \$85 = \$416.20$.

Mulching a Garden Bed



Convert the base to metres before you calculate the area.



Question 3. A triangular garden bed has a base of 500 cm and a perpendicular height of 3.2 m. It will be covered with mulch costing \$6.50 per m^2 .

(a) Convert the base length to metres.

Solution $500 \text{ cm} \div 100 = 5 \text{ m}$.

(b) Calculate the area of the garden bed.

Solution $\text{Area} = \frac{1}{2} \times 5 \times 3.2 = 8 \text{ m}^2$.

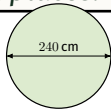
(c) Calculate the cost of the mulch.

Solution $8 \times \$6.50 = \52.00 .

Edging a Circular Pond



Convert the diameter to metres first. Give circumference and area correct to 2 decimal places.



Question 4. A circular garden pond has a diameter of 240 cm. Edging rope costs \$4.20 per metre, and a pond liner costs \$18 per m^2 .

(a) Convert the diameter to metres, then find the radius.

Solution $240 \text{ cm} = 2.4 \text{ m}$, so $\text{radius} = 2.4 \div 2 = 1.2 \text{ m}$.

(b) Calculate the circumference of the pond.

Solution $C = \pi d = \pi \times 2.4 \approx 7.54 \text{ m}$.

(c) Calculate the cost of the edging rope.

Solution $7.5398 \dots \times \$4.20 \approx \31.67 .

(d) Calculate the area of the pond.

Solution $A = \pi r^2 = \pi \times 1.2^2 \approx 4.52 \text{ m}^2$.

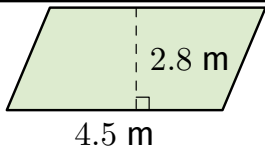
(e) Calculate the cost of the pond liner.

Solution $4.5239 \dots \times \$18 \approx \81.43 .

Paving a Courtyard Section



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



Question 5. A parallelogram-shaped section of a courtyard has a base of 4.5 m and a perpendicular height of 2.8 m. Paving costs \$85 per m^2 , plus a \$50 flat delivery fee.

(a) Calculate the area of the paved section.

Solution $\text{Area} = 4.5 \times 2.8 = 12.6 \text{ m}^2$.

(b) Calculate the cost of the paving (before delivery).

Solution $12.6 \times \$85 = \1071.00 .

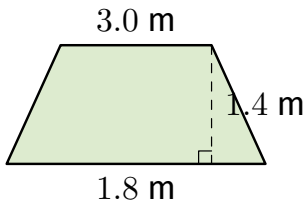
(c) Find the total cost, including delivery.

Solution $\$1071.00 + \$50 = \$1121.00$.

Building a Raised Garden Bed



The perimeter uses all four sides; the area uses the height between the parallel sides.



Question 6. A trapezium-shaped raised garden bed has parallel sides of 3.0 m and 1.8 m, two equal 1.6 m sloped sides, and a perpendicular height of 1.4 m between the parallel sides. Timber edging costs \$22 per metre, and soil costs \$28 per m^2 of bed.

(a) Calculate the perimeter of the bed and the cost of the timber edging.

Solution $P = 3.0 + 1.8 + 1.6 + 1.6 = 8.0$ m. Cost = $8.0 \times \$22 = \176.00 .

(b) Calculate the area of the bed and the cost of the soil.

Solution $A = \frac{1}{2}(3.0 + 1.8)(1.4) = 3.36$ m^2 . Cost = $3.36 \times \$28 = \94.08 .

(c) Find the total cost of the project.

Solution $\$176.00 + \$94.08 = \$270.08$.