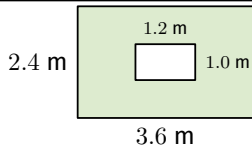


Painting a Bedroom Wall



The window is not painted – subtract its area from the wall's area first.



Question 1. A bedroom wall measures 3.6 m by 2.4 m. A window measuring 1.2 m by 1.0 m sits in the wall and is not painted. The wall needs 2 coats of paint, and one tin covers 10 m^2 per coat.

(a) Calculate the area of the wall and the area of the window.

Solution Wall: $3.6 \times 2.4 = 8.64 \text{ m}^2$. Window: $1.2 \times 1.0 = 1.2 \text{ m}^2$.

(b) Calculate the area that actually needs painting (wall minus window).

Solution $8.64 - 1.2 = 7.44 \text{ m}^2$.

(c) Calculate the total paint coverage needed for 2 coats, then find how many tins are needed (only whole tins can be bought).

Solution $7.44 \times 2 = 14.88 \text{ m}^2$. $14.88 \div 10 = 1.488$, round UP = 2 tins.

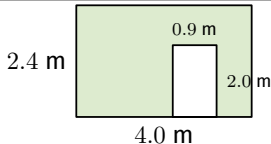
(d) Each tin costs \$42. Find the total cost of the paint.

Solution $2 \times \$42 = \84.00 .

Painting a Garden Shed Door Wall



The door is not painted – subtract its area from the wall's area first.



Question 2. A garden shed's front wall measures 4.0 m by 2.4 m. A door measuring 0.9 m by 2.0 m sits in the wall and is not painted. The wall needs only 1 coat, and one tin covers 8 m^2 .

(a) Calculate the area of the wall and the area of the door.

Solution Wall: $4.0 \times 2.4 = 9.6 \text{ m}^2$. Door: $0.9 \times 2.0 = 1.8 \text{ m}^2$.

(b) Calculate the area that needs painting.

Solution $9.6 - 1.8 = 7.8 \text{ m}^2$.

(c) Only 1 coat is needed. How many tins are needed?

Solution $7.8 \div 8 = 0.975$, round UP = 1 tin.

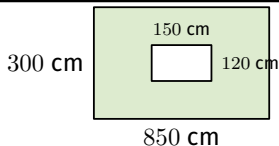
(d) Each tin costs \$38. Find the total cost of the paint.

Solution $1 \times \$38 = \38.00 .

Painting a Community Hall Wall



Convert every dimension to metres before you calculate.



Question 3. A community hall wall measures 850 cm by 300 cm. A window measuring 150 cm by 120 cm sits in the wall and is not painted. The wall needs 2 coats, and one tin covers 12 m^2 per coat.

(a) Convert all dimensions to metres.

Solution $850 \text{ cm} = 8.5 \text{ m}$, $300 \text{ cm} = 3.0 \text{ m}$, $150 \text{ cm} = 1.5 \text{ m}$, $120 \text{ cm} = 1.2 \text{ m}$.

(b) Calculate the area of the wall and the area of the window, then the area that needs painting.

Solution Wall: $8.5 \times 3.0 = 25.5 \text{ m}^2$. Window: $1.5 \times 1.2 = 1.8 \text{ m}^2$. Paintable: $25.5 - 1.8 = 23.7 \text{ m}^2$.

(c) The wall needs 2 coats. Calculate how many tins are needed.

Solution $23.7 \times 2 = 47.4 \text{ m}^2$. $47.4 \div 12 = 3.95$, round UP = 4 tins.

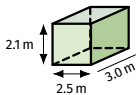
(d) Each tin costs \$55. Find the total cost.

Solution $4 \times \$55 = \220.00 .

Painting a Shed's Exterior Walls



The shed's four exterior walls form a rectangular prism – use the floor's perimeter and the wall height.



Question 4. A garden shed has a rectangular floor 3.0 m by 2.5 m, and its walls are 2.1 m tall. The four exterior walls need 2 coats of paint, and one tin covers 9 m^2 per coat.

(a) Calculate the perimeter of the shed's floor.

Solution $2 \times (3.0 + 2.5) = 11.0 \text{ m}$.

(b) Calculate the total area of the four exterior walls (perimeter $\times$ height).

Solution $11.0 \times 2.1 = 23.1 \text{ m}^2$.

(c) The walls need 2 coats. Calculate how many tins are needed.

Solution $23.1 \times 2 = 46.2 \text{ m}^2$. $46.2 \div 9 = 5.1\bar{3}$, round UP = 6 tins.

(d) Each tin costs \$47. Find the total cost.

Solution $6 \times \$47 = \282.00 .

Painting a Fence (Both Sides)



Both sides of the fence need painting – double the area of one side.

1.8 m



12 m

Question 5. A timber fence is 12 m long and 1.8 m high. Both sides need painting, but only 1 coat is needed. One tin covers 15 m^2 .

(a) Calculate the area of one side of the fence.

Solution $12 \times 1.8 = 21.6 \text{ m}^2$.

(b) Both sides need painting. Calculate the total area to be painted.

Solution $21.6 \times 2 = 43.2 \text{ m}^2$.

(c) Only 1 coat is needed. How many tins are needed?

Solution $43.2 \div 15 = 2.88$, round UP = 3 tins.

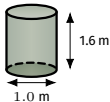
(d) Each tin costs \$39. Find the total cost.

Solution $3 \times \$39 = \117.00 .

Painting a Water Tank



Only the curved side of the tank needs painting – use $2\pi rh$.



Question 6. A cylindrical water tank has a radius of 0.5 m and a height of 1.6 m. Only the curved side needs 1 coat of weatherproof paint. One tin covers 5 m^2 .

(a) Calculate the curved surface area of the tank ($2\pi rh$).

Solution $2 \times \pi \times 0.5 \times 1.6 \approx 5.03 \text{ m}^2$.

(b) Only 1 coat is needed. How many tins are needed?

Solution $5.0265 \dots \div 5 \approx 1.01$, round UP = 2 tins.

(c) Each tin costs \$52. Find the total cost.

Solution $2 \times \$52 = \104.00 .