



# Perimeter and Area

## Exercise-2

1. (a) Perimeter =  $(3 + 3 + 4 + 5 + 4)$  cm = 19 cm  
(b) Perimeter =  $(4 + 6 + 7 + 3)$  cm = 20 cm  
(c) Perimeter =  $(4 + 4 + 6 + 8 + 6)$  cm = 28 cm  
(d) Perimeter =  $(5 + 1 + 2 + 4 + 1 + 4 + 2 + 1)$  cm = 20 cm  
(e) Perimeter =  $(2 + 3 + 2 + 2 + 3 + 3)$  cm = 15 cm  
(f) Perimeter =  $(5 + 1 + 3 + 2 + 1 + 1 + 1 + 2 + 2 + 6)$  cm = 24 cm

2. Perimeter of square =  $4 \times \text{side}$

- (a) Perimeter =  $4 \times 14$  cm = 56 cm  
(b) Perimeter =  $4 \times 35$  cm = 140 cm  
(c) Perimeter =  $4 \times 17$  m = 68 m  
(d) Perimeter =  $4 \times 42$  m = 168 m

3. Perimeter of the square cloth = 220 cm

$$\Rightarrow 4 \times \text{side} = 220 \text{ cm}$$

$$\therefore \text{side} = \frac{220}{4} \text{ cm} = 55 \text{ cm}$$

$\therefore$  The length of the side of the square cloth is 55 cm.

4. Perimeter of a rectangle =  $2 (\text{length} + \text{breadth})$

- (a) Perimeter =  $2 (24 + 17)$  cm =  $2 \times 41$  cm = 82 cm  
(b) Perimeter =  $2 (42 + 20)$  m =  $2 \times 62$  m = 124 m  
(c) Perimeter =  $2 (36 + 15)$  m =  $2 \times 51$  m = 102 m

5. Length of the rectangular park = 96 m

Breadth of the rectangular park = 64 m

$\therefore$  Length of the wire needed = perimeter of the rectangular park

$$= 2 (\text{length} + \text{breadth})$$

$$= 2 (96 + 64) \text{ m}$$

$$= 2 \times 160 \text{ m} = 320 \text{ m}$$

6. (a) Perimeter = sum of the lengths of the sides

$$\Rightarrow 32 = 8 + 6 + 11 + 4\text{th side}$$

$$\Rightarrow 32 = 25 + 4\text{th side}$$

$$\Rightarrow 4\text{th side} = 32 - 25 = 7 \text{ cm}$$



$$(b) \text{ Perimeter of rectangle} = 2 (\text{length} + \text{breadth})$$

$$\Rightarrow 40 = 2 (14 + \text{breadth})$$

$$\Rightarrow 40 = 28 + 2 \times \text{breadth}$$

$$\Rightarrow 2 \times \text{breadth} = 12$$

$$\Rightarrow \text{Breadth} = \frac{12}{2} = 6 \text{ cm}$$

$$7. \quad \text{Length of the table cloth} = 2 \text{ m}$$

$$\text{Breadth} = 1 \text{ m}$$

$$\text{Perimeter} = 2 (\text{length} + \text{breadth})$$

$$= 2 (2 + 1) \text{ m} = 2 \times 3 \text{ m} = 6 \text{ m}$$

Now, length of lace bought by Maya = 7 m

The length of lace needed = 6 m

So, the lace bought by Maya is sufficient.

Now, the length of the lace left =  $(7 - 6) \text{ m} = 1 \text{ m}$

### Exercise-3

$$1. (a) \text{ Area} = 4 \text{ cm}^2$$

$$(b) \text{ Area} = 12 \text{ cm}^2$$

$$2. \text{ Area of a rectangle} = \text{length} \times \text{breadth}$$

$$(a) \text{ Area} = 24 \times 9 \text{ sq. cm} = 216 \text{ sq. cm}$$

$$(b) \text{ Area} = 30 \times 18 \text{ sq. cm} = 540 \text{ sq. cm}$$

$$3. \text{ Area of a square} = \text{side} \times \text{side}$$

$$(a) \text{ Area} = 17 \times 17 \text{ sq. cm} = 289 \text{ sq. cm}$$

$$(b) \text{ Area} = 21 \times 21 \text{ sq. cm} = 441 \text{ sq. cm}$$

$$(c) \text{ Area} = 35 \times 35 \text{ sq. cm} = 1225 \text{ sq. cm}$$

$$(d) \text{ Area} = 45 \times 45 \text{ sq. cm} = 2025 \text{ sq. cm}$$

$$4. \quad \text{Length of the rectangular table} = 280 \text{ cm}$$

$$\text{Breadth} = 125 \text{ cm}$$

$$\therefore \text{Area} = \text{length} \times \text{breadth}$$

$$= (280 \times 125) \text{ sq. cm}$$

$$= 35000 \text{ sq. cm}$$

$\therefore$  Area of the rectangular table is 35000 sq. cm.

$$5. \text{ Length of the side of square tile} = 32 \text{ cm}$$

$$\therefore \text{Area} = \text{side} \times \text{side}$$

$$= (32 \times 32) \text{ sq. cm} = 1024 \text{ sq. cm}$$

So, area of the square tile is 1024 sq. cm.



## Puzzle

Given that each post is 5 m apart.

Length of the wire needed = Perimeter of the figure

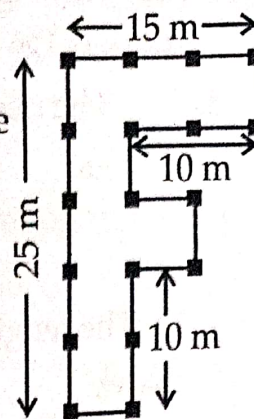
$$= (15 + 5 + 10 + 5 + 5 + 5 + 5 + 10 + 5 + 25) \text{ m}$$

$$= 90 \text{ m}$$

**Alternative method :**

We can see that there are 18 joinings and length of each joining is 5 m. So, total length of wire needed

$$= 18 \times 5 \text{ m} = 90 \text{ m}.$$



## Mental Maths Corner

1. (a) (iii)

$$\text{Perimeter of the square} = 4 \times \text{side} = 4 \times 25 \text{ cm} = 100 \text{ cm} = 1 \text{ m}$$

(b) (ii)

$$\text{Area of the square} = \text{side} \times \text{side} = 15 \times 15 \text{ sq. m} = 225 \text{ sq. m}$$

(c) (ii)

$$\text{Breadth} = \frac{\text{Area}}{\text{Length}} = \frac{2}{2} \text{ m} = 1 \text{ m} = 100 \text{ cm}$$

(d) (ii)

$$\text{Perimeter of the rectangle} = 2(\text{length} + \text{breadth})$$

$$= 2(100 + 50) \text{ cm } (\because 1 \text{ m} = 100 \text{ cm})$$

$$= 2 \times 150 \text{ cm} = 300 \text{ cm} = 3 \text{ m}$$

$$2. \text{ (a) Perimeter} = (2 + 3 + 1 + 1 + 1 + 2) \text{ cm} = 10 \text{ cm}$$

$$\text{ (b) Perimeter} = (2 + 1 + 1 + 2 + 3 + 3) \text{ cm} = 12 \text{ cm}$$

$$\text{ (c) Perimeter} = (3 + 3 + 1 + 2 + 1 + 2 + 1 + 3) \text{ cm} = 16 \text{ cm}$$

## Review Exercise

$$1. \text{ Length of the rectangular playground} = 48 \text{ m}$$

$$\text{Breadth of the rectangular playground} = 30 \text{ m}$$

$$\therefore \text{ Length of the wire needed} = \text{perimeter of rectangular playground}$$

$$= 2(\text{length} + \text{breadth})$$

$$= 2(48 + 30) \text{ m}$$

$$= 2 \times 78 \text{ m} = 156 \text{ m}$$



So, the length of wire needed to put a fence around the rectangular park is 156 m.

2. The perimeter of a square tile = 128 cm

$$\Rightarrow 4 \times \text{side} = 128$$

$$\therefore \text{side} = \frac{128}{4} \text{ cm} = 32 \text{ cm}$$

$\therefore$  The length of side of square tile is 32 cm.

Now, area of the tile =  $32 \times 32$   
= 1024 sq. cm

So, area of the square tile is 1024 sq. cm.

3. Length of the blackboard = 300 cm

Breadth of the blackboard = 140 cm

$$\begin{aligned} \therefore \text{Perimeter} &= 2 (\text{length} + \text{breadth}) \\ &= 2 (300 + 140) \text{ cm} \\ &= 2 \times 440 \text{ cm} = 880 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{Area} &= \text{length} \times \text{breadth} \\ &= (300 \times 140) \text{ sq. cm} \\ &= 42000 \text{ sq. cm.} \end{aligned}$$

So, perimeter of the blackboard is 880 cm and area of the blackboard is 42000 sq. cm.

4. Length of rectangular room = 5 m

Breadth of rectangular room = 4 m 15 cm = 4.15 m

$$\begin{aligned} \therefore \text{Area of rectangular room} &= \text{Length} \times \text{breadth} \\ &= 5 \times 4.15 \text{ sq. m} \\ &= 20.75 \text{ sq. m} = 207500 \text{ sq. cm} \end{aligned}$$

5. Raju has a square field of side 50 m and Shyam has a rectangular field of length 60 m and breadth 40 m.

Perimeter of Ram's field =  $4 \times \text{side} = 4 \times 50 \text{ m} = 200 \text{ m}$

Area of Ram's field =  $\text{side} \times \text{side} = 50 \times 50 \text{ sq. m} = 2500 \text{ sq. m}$

Perimeter of Shyam's field =  $2 (\text{length} + \text{breadth})$   
=  $2(60 + 40) \text{ m} = 2 \times 100 \text{ m} = 200 \text{ m}$

Area of Shyam's field =  $\text{length} \times \text{breadth} = 60 \times 40 \text{ sq. m} = 2400 \text{ sq. m}$

Thus, perimeters of both the fields are same but area of Raju's field is greater by  $(2500 - 2400) \text{ sq. m} = 100 \text{ sq. m}$ .



## HOTS

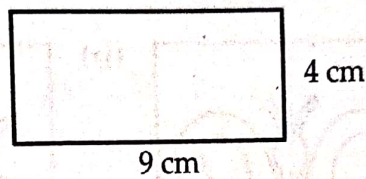
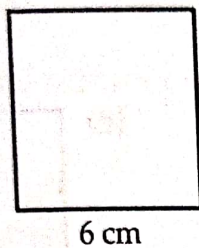
A farmer built a fence around his square land. He used 37 poles on each side. It means each side of the square land has 37 poles. So, number of poles used by the farmer

$$= 4 \times 37 - 4 \quad (\because \text{Poles at corners are counted twice})$$

$$= 148 - 4 = 144$$

Thus, the farmer used 144 poles altogether.

## Maths Lab Activity



(i) Area of square = side  $\times$  side  
 $= (6 \times 6) \text{ sq. cm} = 36 \text{ sq. cm}$

and area of rectangle =  $(9 \times 4) \text{ sq. cm} = 36 \text{ sq. cm}$

Yes, the area of square is equal to the area of the rectangle.

(ii) Perimeter of square =  $4 \times \text{side}$   
 $= 4 \times 6 \text{ cm}$   
 $= 24 \text{ cm}$

Perimeter of the rectangle =  $2 (\text{length} + \text{breadth})$   
 $= 2 (9 + 4)$   
 $= 2 \times 13 \text{ cm} = 26 \text{ cm}$

No, the perimeter of square is not equal to the perimeter of rectangle.