Class – 4^{th}

Field and Fences

Notes

- Important point :

  a)The surface inside a figure is called Area.

  b)The length of boundary of any shape is called perimeter .

or

  if we add all the sides of any figure we get the perimeter of that figure .

- Formulas

  (i)Area of square = $a \times a$

  (ii)Perimeter of square = $4 \times a$

  (iii)Area of rectangle = $l \times b$

  (iv)Perimeter of rectangle=$2 \times (l + b)$

- Unit of Area = cm^2 , m^2
- Unit of perimeter = cm , m

Question realted to perimeter and area of square

Q .1)Find the area and perimeter of square whose side is given

(i) 2cm

Area of square = $a \times a$

$= 2cm \times 2cm$

$= 4cm^2$

Perimeter of square = $4 \times a$

$= 4 \times 2cm$

$= 8cm$

(ii) 4cm

Area of square = $a \times a$

$= 4cm \times 4cm$

$= 16cm^2$

Perimeter of square = $4 \times a$

$= 4 \times 4cm$

$= 16cm$

(iii) 8cm

Area of square = $a \times a$

$= 8cm \times 8cm$

$= 64cm^2$

Perimeter of square = $4 \times a$

$= 4 \times 8cm$

$= 32cm$

Q .2)Find the area and perimeter of Rectangle whose length and breath is given

(i) $l = 3cm \text{ and } b = 2cm$

Area of rectangle = $l \times b$

$= 3cm \times 2\text{cm}$

$= 6\text{cm}^2$

Perimeter of rectangle = $2 \times (l + b)$

$= 2 \times (3cm + 2cm)$

$= 2 \times 5cm$

= 10cm

(ii) $l = 4cm \text{ and } b = 5cm$

Area of rectangle = $l \times b$

$= 4cm \times 5\text{cm}$

$= 20\text{cm}^2$

Perimeter of rectangle = $2 \times (l + b)$

$= 2 \times (4cm + 5cm)$

$= 2 \times 9cm$

= 18cm

(iii) $l = 6cm \text{ and } b = 2cm$

Area of rectangle = $l \times b$

$= 6cm \times 2\text{cm}$

$= 12\text{cm}^2$

Perimeter of rectangle = $2 \times (l + b)$

$= 2 \times (6cm + 2cm)$

$= 2 \times 8cm$

= 16cm

(iv) $l = 3cm \text{ and } b = 10cm$

Area of rectangle = $l \times b$

$= 3cm \times 10\text{cm}$

$= 30\text{cm}^2$

Perimeter of rectangle = $2 \times (l + b)$

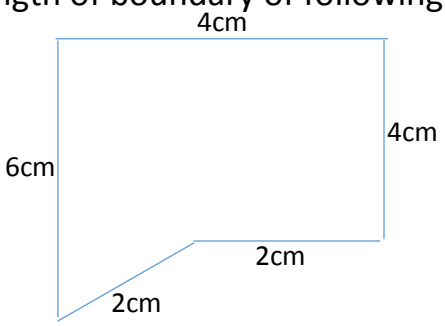
$= 2 \times (3cm + 10cm)$

$= 2 \times 13cm$

= 26cm

Q.3)Find the length of boundary of following figures.

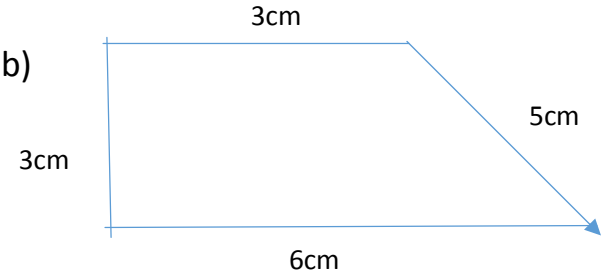
a)



Ans: perimeter = 4cm+4cm+2cm+2cm+6cm

=18cm

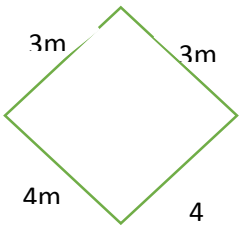
b)



Ans: perimeter = 3cm+5cm+6cm+3cm

=17cm

c)

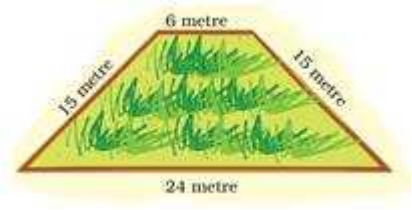


Ans: perimeter = 3cm+3cm+4cm+4cm

=14cm

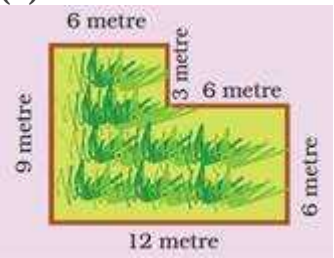
Q.4)Here are the picture of some more fields. Find out which one has the biggest boundary.

(a)



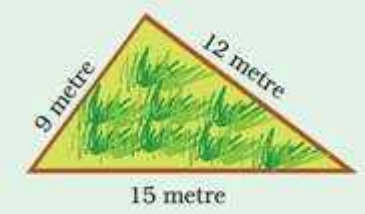
Ans. Boundary = (24 + 15 + 6 + 15) metres= 60 metres

(b)



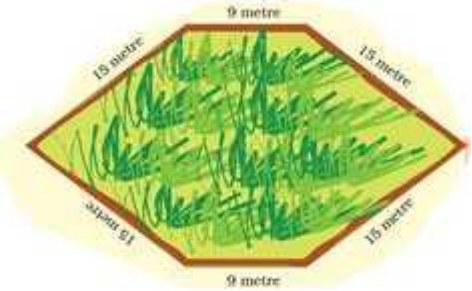
Ans. Boundary = (12 + 6 +6 + 3 +6 + 9) metres = 42 metres.

(c)



Ans. Boundary = (15 + 12 + 9) metres = 36 metres.

(d)



Ans. (d) Boundary = (9 + 15 + 15 + 9 + 15 + 15) metres = 78 metres.

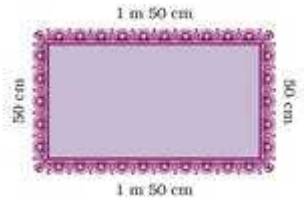
Q -5)Chandu's father is called the "young old man" in his village. At 70 years age, he is fully fit. Do you know his secret? He goes for a walk around the field every morning. Everyday he takes four rounds of Chandu's fields. What is the total distance he covers.

4 × ___ = _____ m = _____ km

Ans. Boundary of Chandu's field = 100 m + 150 m + 100 m + 150 m = 500m.
Total Distance covered by Chandu's father = 4 × Boundary of Chandu's field

= 4 × 500m = 2000 m = 2 km.

Q -6) Look at the picture of the table cloth and tell how much is used for one table cloth.



Ans. Length of lace = 2 × (1m 50 cm + 50 cm) = 2 × 2m = 4m.

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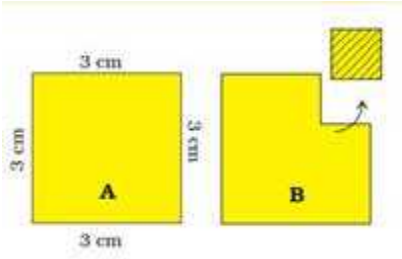
b) How much lace will be used in 3 such table clothes? How much lace will be left in the roll?
Ans. Lace used for one table cloth = 1m 50 cm + 50 cm + 1m 50 cm + 50 cm = 4metres
Lace used for 3 such table cloths = 3 × 4 Lace used for on one table cloth

= 3 × 4 metres = 12 metres.

Lace left in the roll = Total Lace – Lace used = 100m – 12m = 88m.

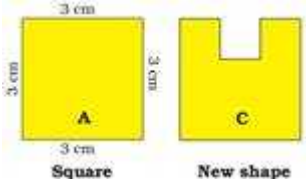
Q -7) A square has a boundary of 12 cm.
(a) From the corner of this square, a small square of side 1 cm is cut off. Will the boundary of B be less or more? Find its length.



Ans. Boundary of B = 3cm + 2 cm + 1 cm + 2 cm +3 cm = 12cm
Since the boundary of A is also 12 cm.

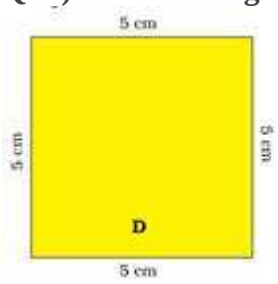
So, the boundary of B is neither less nor more than that of A. But their boundaries are equal.

(b) If you cut 1 cm square to get shape C what will be the length of the boundary of C?



Ans. Boundary of C = 3cm + 3cm + 1cm + 1cm + 1 cm +1cm + 1cm + 3 cm = 14 cm.

Q -8) Find the length of the boundary of square D.



Ans. Length of the boundary of square D = 5cm + 5cm + 5cm + 5cm = 20cm

Q -9) A hockey field is 91 metres 40cm and 55 metres wide. How long is the boundary of the field?

Ans. Length of the boundary of a hockey field = 91m + 40cm +55m + 91m 40 cm +55m
= 292 m 80 cm