EXERCISE-01

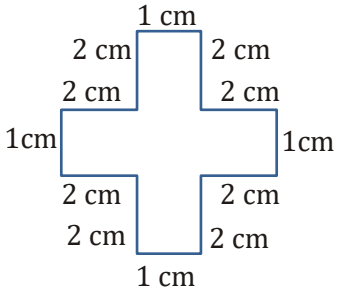
Multiple Choice Questions

1. A page is 25 cm long and 20 cm wide. Find the perimeter of this page.

(1) 90 cm (2) 45 cm

(3) 50 cm (4) 5 cm

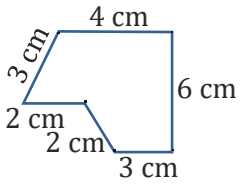
2. The perimeter of the figure



(1) 5 cm (2) 10 cm

(3) 15 cm (4) 20 cm

3. The perimeter of the figure is



(1) 20 cm (2) 10 cm

(3) 24 cm (4) 15 cm

4. Meenu wants to put a lace border all around a rectangle table cover 2 m long and 1 m wide. Find the length of the lace required by Meenu.

(1) 3 m (2) 4 m (3) 5 m (4) 6 m

5. Find the perimeter of a rectangle whose length and breadth are 9 cm and 1 cm respectively.

(1) 10 cm (2) 20 cm

(3) 30 cm (4) 40 cm

6. An athlete takes 10 rounds of a rectangular park which is 40 m long and 30 m wide. Find the total distance covered by him.

(1) 1400 m (2) 700 m

(3) 70 m (4) 2800 m

7. Find the cost of fencing a rectangular park of length 10 m and breadth 5 m at the rate of ₹10 per metre.

(1) ₹ 300 (2) ₹ 600

(3) ₹ 150 (4) ₹ 1200

8. The perimeter of a square of side 1 cm is

(1) 1 cm (2) 2 cm

(3) 3 cm (4) 4 cm

9. The perimeter of an equilateral triangle of side 1 m is

(1) 1 m (2) 2 m (3) 3 m (4) 6 m

10. The perimeter of a regular pentagon of side 1 m is

(1) 5 m (2) 10 m

(3) 15 m (4) 20 m

11. The perimeter of a regular hexagon of side 1 m is

(1) 3 m (2) 2 m (3) 4 m (4) 6 m

12. Find the distance travelled by Sangeeta if she takes 5 rounds of a square park of side 10 m.

(1) 200 m (2) 100 m

(3) 400 m (4) 800 m

13. The perimeter of an equilateral triangle is 9 m. Find the length of the side.

(1) 1 m (2) 2 m (3) 3 m (4) 9 m

14. The perimeter of a square is 8 m. Find the length of the side.

(1) 1 m (2) 2 m (3) 4 m (4) 8 m

15. The perimeter of regular pentagon is 10 m. Find the length of the side.

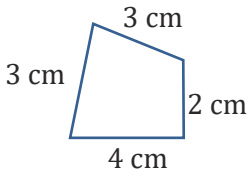
(1) 1 m (2) 2 m

(3) 5 m (4) 10 m

16. The perimeter of a regular hexagon is 12 m. Find the length of the side.

(1) 2 m (2) 3 m (3) 4 m (4) 6 m

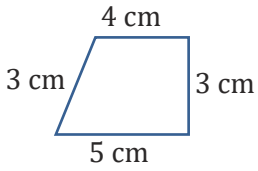
17. The perimeter of the figure is



(1) 12 cm (2) 7 cm

(3) 6 cm (4) 24 cm

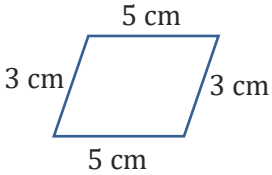
18. The perimeter of the figure is



(1) 15 cm (2) 30 cm

(3) 7.5 cm (4) 20 cm

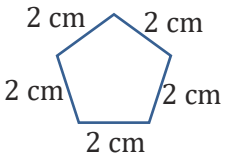
19. The perimeter of the figure is



(1) 8 cm (2) 12 cm

(3) 15 cm (4) 16 cm

20. The perimeter of the figure is



(1) 10 cm (2) 20 cm

(3) 15 cm (4) 50 cm

21. The perimeter of a triangle of sides 2 cm, 3 cm and 4 cm is

(1) 9 cm (2) 18 cm

(3) 27 cm (4) 36 cm

22. Two sides of a triangle are 5 cm and 4 cm. The perimeter of the triangle is 12 cm. The third side has length

(1) 1 cm (2) 2 cm

(3) 3 cm (4) 6 cm

23. A rectangular piece of land measures 0.5 km by 0.25 km. Each side is to be fenced with 4 rounds of wire. What is the length of the wire needed ?

(1) 2 km (2) 3 km

(3) 4 km (4) 6 km

24. The area of a rectangle of length 2 cm and breadth 1 cm is

(1) 1 cm^2 (2) 2 cm^2

(3) 4 cm^2 (4) 8 cm^2

25. The area of a square of side 1 cm is

(1) 1 cm^2 (2) 4 cm^2

(3) 9 cm^2 (4) 16 cm^2

26. The area of a rectangular sheet of paper is 20 cm^2. Its length is 5 cm. Find its width.

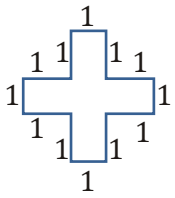
(1) 1 cm (2) 2 cm

(3) 3 cm (4) 4 cm

27. The perimeter of a rectangular piece of card-board is 6 m. Its breadth is 1 m. Find its length.

(1) 1 m (2) 2 m (3) 3 m (4) 6 m

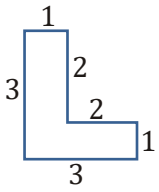
28. The area of the figure is



(1) 1 sq. unit (2) 5 sq. units

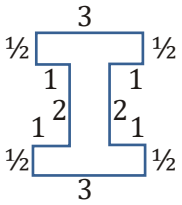
(3) 4 sq. units (4) 6 sq. units

29. The area of the given figure (in sq. units) is



(1) 1 (2) 5 (3) 4 (4) 6

30. The area of the figure is



(1) 5 sq. units (2) 9 sq. units

(3) 7 sq. units (4) 8 sq. units

True or false

1. The perimeter of a regular polygon of n sides is n times the length of each side.

2. A person preparing a track to conduct sports events must find the perimeter of the sports ground.

3. Srishti wants to paint a rectangular cardboard piece. She must find its perimeter to find the space to be painted.

4. The perimeter of a regular octagon of side 5 cm is 30 cm.

5. Area of a square is tripled if the side of the square becomes three times.

6. Perimeter of square is doubled, if each of its sides is doubled.

7. If length of a rectangle is halved and breadth is doubled, then the area of the rectangle obtained remains the same.

8. If both length and breadth of a rectangle is doubled, its perimeter is also doubled.

9. Area of rectangle is always equal to area of square.

10. Perimeter of rectangle may be equal to area of square.

Fill in the blanks

1. The distance covered along the boundary of a closed figure is called its _____ .

2. The perimeter of a rectangle is twice the _____ of its length and breadth.

3. The polygons with all sides of equal length are known as _____ polygons.

4. The amount of surface enclosed by a closed figure is called its _____ .

5. The area of a rectangle is the _____ of its length and breadth.

6. To find the area of a square, we multiply its _____ twice.

7. If the perimeter of a square is known, we _____ it by 4 to find its side.

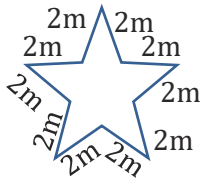
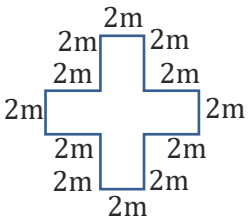
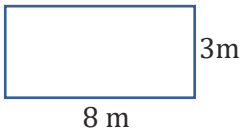
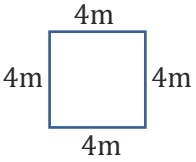
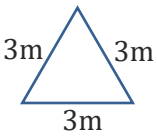
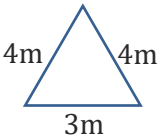
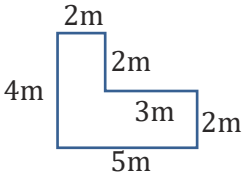
8. 1 m = _____ cm.

9. 1 sq. m = _____ m × 1 m = _____ cm × _____cm.

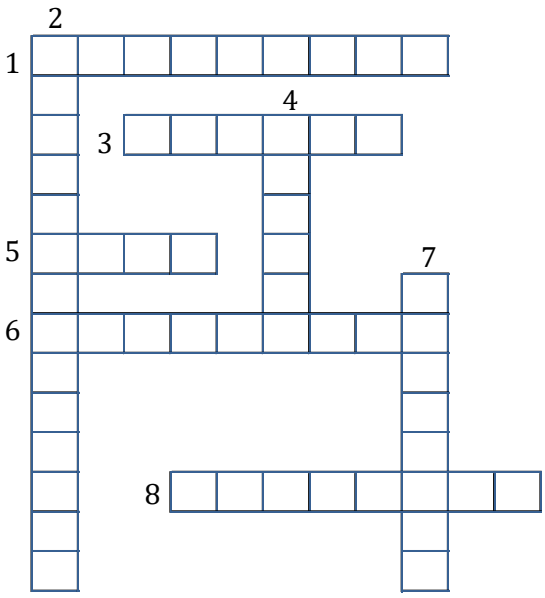
10. 1 sq m = _____ sq cm.

Match the column

Match the perimeter of the shapes in column-I with column-II

Column – I		Column – II	
(1)		(a)	22 m
(2)		(b)	9 m
(3)		(c)	11 m
(4)		(d)	18 m
(5)		(e)	16 m
(6)		(f)	20 m
(7)		(g)	24 m

Crossword Puzzle



Across

1. A quadrilateral whose all angles are equal but adjacent sides are not equal.

3. A curve / figure whose starting and end points coincide.

5. The measure of the region enclosed by a closed curve on a surface.

6. The length of boundary of a closed figure.

8. A polygon of 5 sides.

Down

2. A polygon whose all sides and all angles are equal.

4. A regular quadrilateral.

7. The polygon with least number of sides.

ANSWER KEY

Multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	**1**	**4**	**1**	**4**	**2**	**1**	**1**	**4**	**3**	**1**	**4**	**1**	**3**	**2**	**2**
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	**1**	**1**	**1**	**4**	**1**	**1**	**3**	**4**	**2**	**1**	**4**	**2**	**2**	**2**	**1**

True or False

1. True **2.** True **3.** False **4.** False

5. False **6.** True **7.** True **8.** True

9. False **10.** True

Fill in the blanks

1. perimeter **2.** sum **3.** regular **4.** Area

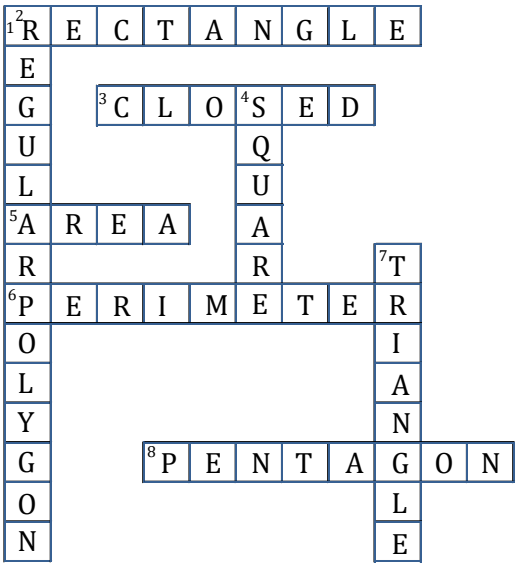
5. product **6.** Side **7.** divide **8.** 100

9. 1,100,100 **10.** 10,000

Match the column

(1) → f ; (2) → g ; (3) → a ; (4) → e ; (5) → b ; (6) → c ; (7) → d

Crossword Puzzle



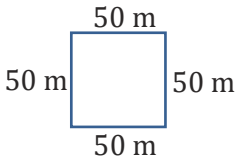
1. Rectangle **2.** Regular Polygon **3.** Closed **4.** Square

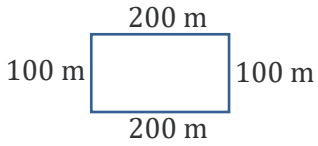
5. Area **6.** Perimeter **7.** Triangle **8.** Pentagon

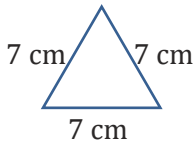
EXERCISE-02

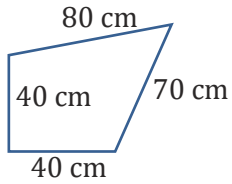
Short answer type questions

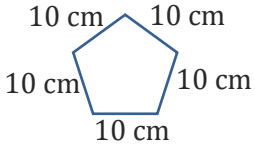
1. Calculate the perimeter of the following figures.

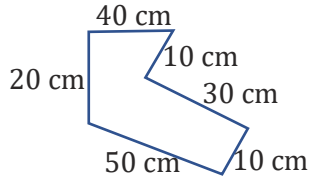
(i) 

(ii) 

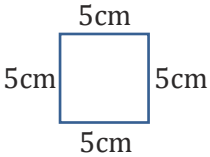
(iii) 

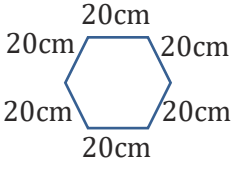
(iv) 

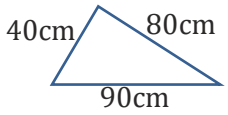
(v) 

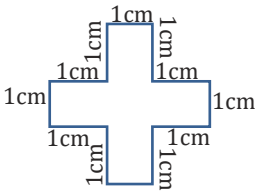
(vi) 

2. Calculate the perimeter of the following figures.

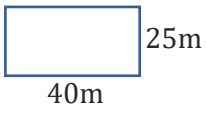
(i) 

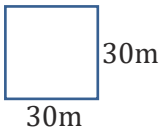
(ii) 

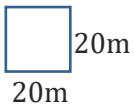
(iii) 

(iv) 

3. Find the area of the following figures.

(i) 

(ii) 

(iii) 

4. What will happen to the perimeter of a rectangle if its length and breadth is tripled?

5. Two sides of a triangle are 10 cm and 12 cm. The perimeter of the triangle is 35 cm. What will be the length of the third side?

6. Find the perimeter of a rectangular lawn whose length is 20 m 50 cm and breadth is 12 m 20 cm.

7. A rectangular piece of plot measures 0.6 km by 0.5 km. Each side is to be fenced with 5 rows of wires. What is the length of the wire needed? If the wire costs ₹ 9 per metre, what will be the cost of the wire required for fencing?

8. Find the length of a rectangular playground having perimeter 600 m and breadth 90 m.

9. An athlete takes 12 rounds of a rectangular park 150 m long and 100 m wide. Find the total distance covered by him?

10. Ranjan walks around a rectangular park of length 60 m and breadth 40 m and Smita walks around a square park of side 55 m. Both take 3 rounds each. Who walks more distance and by how much?

Long answer type questions

11. A rectangular piece of land is to be fenced for an exhibition. The length of the exhibition land is 250 m and its breadth is 200 m. We need to keep an entrance of 10 m and an emergency exit of 5 m. If the cost of this special fencing is ₹175 per metre, what will be the total cost of fencing?

12. A rectangular field is 15 m long and 10 m wide. Another rectangular field having the same perimeter has its sides in the ratio 4 : 1. Find the dimensions of the rectangular field.

13. A rectangle and a square are equal in area. The side of the square is 24 m. If the length of the rectangle is 36 m, find the breadth of the rectangle. Comment on their perimeters.

14. A drawing room is 5 m 40 cm long and 4 m 10 cm wide. How much carpet is required to cover the drawing room and what will be the cost of the carpet, if 1 sq. m of carpet costs ₹325?

15. Find the cost of levelling a ground at the rate of ₹12 per square metre if it is 45 m long and 30 m wide.

16. Find the cost of fencing a rectangular field 34 m 20 cm long and 16 m 30 cm wide at ₹40 per metre. What will be the cost of turfing it at ₹ 21 per square metre?

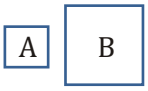
17. What happens to the area of a square, if its sides are doubled?

18. A stick, assumed to be 1 m long, measured the side of a square field. The area thus calculated was 625 square metre. Later on, it was discovered that the actual length of the stick is 90 cm. Find the actual area of the square field.

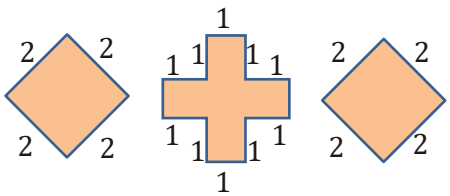
19. How many tiles whose length and breadth are 12 cm and 5 cm respectively will be needed to fit in a rectangular region whose length and breadth are respectively :
(i) 200 cm and 144 cm
(ii) 80 cm and 48 cm

20. Four square flower beds each of side 1 m are dug on a piece of land 7 m long and 5 m wide. What is the area of the remaining part of the land?

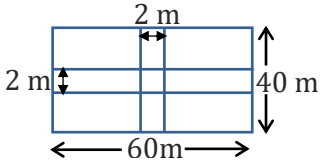
21. How can you show that the area of square A is less than the area of square B without measuring the sides?



22. Find the area of the shaded region in square units.



23. Inside a rectangular park of dimension 60 m by 40 m, a path 2 m wide is built in the middle, one along the length and other along the breadth. What is the area of the remaining part of the park?

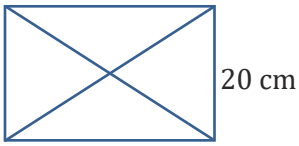


24. Draw (if possible) a polygon inside an equilateral triangle such that the

(i) area of the polygon is greater than that of an equilateral triangle.

(ii) perimeter of the polygon is greater than that of an equilateral triangle.

25. How many envelopes of size 20 cm × 30 cm can be made from a rectangular sheet of paper measuring 5m × 3 m?



ANSWER KEY

Short answer type questions

1. (i) 200 m (ii) 600 m (iii) 21 cm (iv) 230 cm
(v) 50 cm (vi) 160 cm

2. (i) 20 cm (ii) 120 cm (iii) 210 cm (iv) 12 cm

3. (i) 1000 sq. m (ii) 900 sq. m (iii) 400 sq. m

4. Perimeter will increase to three times of original perimeter.

5. 13 cm **6.** 65 m 40 cm **7.** 11 km, ₹ 99,000 **8.** 210 m

9. 6,000 m **10.** Smita walks 60 m more than Ranjan

Long answer type questions

11. ₹ 1,54,875 **12.** ℓ = 20 m, b = 5 m

13. 16 m, perimeter of rectangle = 104 m, perimeter of square = 96 m

14. 22.14 m^2, ₹ 7,195.50 **15.** ₹ 16,200

16. ₹ 4,040, ₹ 11,706.66 **17.** Area becomes 4 times

18. 506.25 m^2 **19.** (i) 480 tiles (ii) 64 tiles

20. 31 m^2 **21.** A lies completely inside B

22. 13 sq. units **23.** 2204 m^2

24. (i) not possible (ii) possible **25.** 250 envelopes

Exercise-01 Solutions

Multiple choice questions

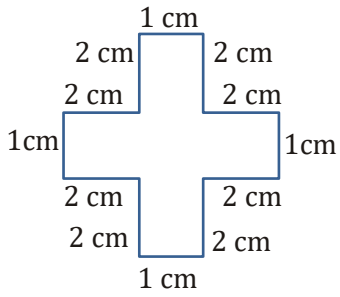
1. Option (1)

Perimeter of page = $2(\ell + b)$

$= 2(25 + 20)$

$= 90$ cm

2. Option (4)



Perimeter of the figure = 1 + 2 + 2 + 1 + 2 + 2 + 1 + 2 + 2 + 1 + 2 + 2 = 20 cm.

3. Option (1)

Perimeter of the figure = 4 + 6 + 3 + 2 + 2 + 3 = 20 cm

4. Option (4)

Length of the lace = 2(2 + 1) = 6 m

5. Option (2)

Perimeter of rectangle = $2(\ell + b)$

$= 2(9 + 1)$

$= 20$ cm

6. Option (1)

Perimeter of rectangular park = 2 × (40 + 30)

= 2 × 70 = 140 m

Total distance = 10 × 140 = 1400 m

7. Option (1)

Perimeter of rectangular park = 2(10 + 5) = 30 m

Cost of Fencing = 10 × 30 = ₹ 300

8. Option (4)

Perimeter of square = 4 × side

= 4 × 1 = 4 cm.

9. Option (3)

Perimeter of equilateral triangle = 3 × side

= 3 × 1 = 3m

10. Option (1)

Perimeter of regular pentagon = 5 × side

= 5 × 1

= 5 m

11. Option (4)

Perimeter of regular hexagon = 6 × side

= 6 × 1

= 6 m

12. Option (1)

Perimeter of square = 4 × 10 = 40 m

Total distance = 5 × 40 = 200 m

13. Option (3)

Perimeter of equilateral triangle = 3 × side

$\Rightarrow 9 = 3 \times \text{side}$

$\Rightarrow \text{Side} = \frac{9}{3} = 3\text{m}$

14. Option (2)

Perimeter of a square = 4 × side

$\text{side} = \frac{\text{Perimeter}}{4} = \frac{8}{4}$

Side = 2m

15. Option (2)

$\text{Length of side} = \frac{\text{Perimeter}}{5}$

$= \frac{10}{5}$

= 2m

16. Option (1)

$\text{Length of side} = \frac{\text{Perimeter}}{6}$

$= \frac{12}{6} = 2\text{m}$

17. Option (1)

Perimeter of the figure = 3 + 3 + 2 + 4 = 12 cm

18. Option (1)

Perimeter of the figure = 3 + 4 + 3 + 5 = 15 cm

19. Option (4)

Perimeter of the figure = 3 + 5 + 3 + 5 = 16 cm

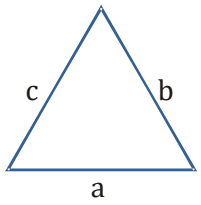
20. Option (1)

Perimeter of the figure = 2 + 2 + 2 + 2 + 2 = 10 cm

21. Option (1)

Perimeter of triangle = 2 + 3 + 4 = 9 cm

22. Option (3)



Perimeter of the triangle = a + b + c

12 = 5 + 4 + c

c = 12 – 9

c = 3 cm = third side

23. Option (4)

Perimeter of rectangular piece= 2 × (0.5 + 0.25)

= 2 × 0.75

= 1.5 km

Length of wire = 4 × 1.5 = 6 km

24. Option (2)

Area of rectangle = $\ell \times b$

= 2 × 1 = 2 cm^2

25. Option (1)

Area of Square = $(side)^2$

= $(1)^2$ = 1 cm^2

26. Option (4)

$$\text{Width} = \frac{\text{Area of rectangle}}{\text{Length}}$$

$$= \frac{20}{5}$$

= 4 cm

27. Option (2)

Perimeter of rectangular = 2 × (ℓ + b)

$6 = 2(\ell + 1)$

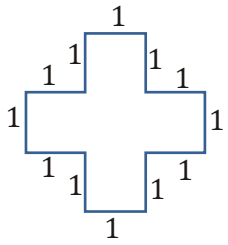
$l + 1 = \frac{6}{2}$

$\ell + 1 = 3$

$\ell = 3 - 1$

ℓ = 2m

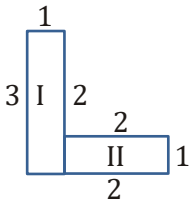
28. Option (2)



Area of one Square = 1 × 1 = 1 Square units

Area of 5 square = 5 × 1 = 5 square units

29. Option (2)

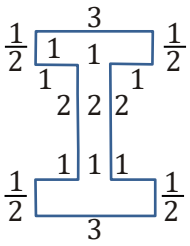


Area of figure

= area (I) + area (II)

= 3 × 1 + 2 × 1 = 5

30. Option (1)



Perimeter of the figure = $\frac{1}{2} + 3 + 1 + 2 + 1 + \frac{1}{2} + 3 + \frac{1}{2} + 1 + 2 + 1 + \frac{1}{2}$ = 16 units.

Exercise-02 Solutions

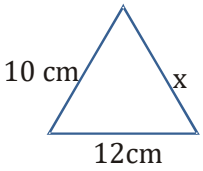
1. (i) Perimeter of figure = 50 + 50 + 50 + 50 = 200 m
(ii) Perimeter of figure = 200 + 100 + 200 + 100 = 600m
(iii) Perimeter of figure = 7 + 7 + 7 = 21 cm
(iv) Perimeter of figure = 40 + 80 + 70 + 40 = 230 cm
(v) Perimeter of figure = 10 + 10 + 10 + 10 + 10 = 50 cm
(vi) Perimeter of figure = 40 + 10 + 30 + 10 + 50 + 20 = 160 cm

2. (i) Perimeter of figure = 4 × 5 = 20 cm
(ii) Perimeter of figure = 6 × 20 = 120 cm
(iii) Perimeter of figure = 40 + 80 + 90 = 210 cm
(iv) Perimeter of figure = 12 × 1 = 12 cm

3. (i) Area of the figure= 40 × 25 = 1000 m^2
(ii) Area of the figure = 30 × 30 = 900 m^2
(iii) Area of the figure = 20 × 20 = 400 m^2

4. $P_1 = 2(\ell + b)$
$P_2 = 2(2\ell + 2b)$
$= 2[2(\ell + b)]$
$P_2 = 2P_1$
Perimeter will increase by twice of original perimeter.

5. Perimeter of triangle = 10 + 12 + x



35 = 22 + x
x = 35 – 22
third side = x = 13 cm

6. Perimeter of rectangle = 2 × (ℓ + b)
= 2 × (20.5 + 12.2)
= 2 × (32.7)
= 65.4 m
= 65 m 40 cm

7. Perimeter of rectangle = 2 × (0.6 + 0.5)
= 2 × 1.1
= 2.2 km
= 2.2 × 1000 m
= 2200 m
Length of wire = 5 × 2200
= 11000 m
$= \frac{11000}{1000}$ = 11 km
Cost of the wire = 9 × 11,000
= Rs. 99,000

8. Perimeter of rectangle = 2 × (ℓ + b)

600 = 2 × (ℓ + 90)

ℓ + 90 = 600/2

ℓ + 90 = 300 $\Rightarrow$ ℓ = 300 – 90

ℓ = 210 m

9. Total distance = 12 × 2(150 +100)

= 12 × 2 × 250

= 12 × 500 = 6000 m

10. Total distance covered by Ranjan = 3 × 2 (60 + 40)

= 6 × 100 = 600 m

Total distance covered by Smita = 3 × 4 × 55

= 12 × 55

= 660 m

Smita walk more distance 660 – 600 = 60 m

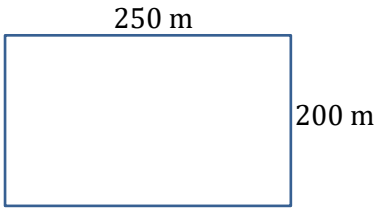
11. Perimeter of land = 2 × (250 + 200)– 10 – 5

= 2 × 450 – 15

= 900 – 15

= 885 m

Cost of fencing = 175 × 885 = ₹ 1,54,875



12. Perimeter of rectangular field = 2 × (15 + 10)

= 2 × 25 = 50 m

Let length of another rectangular = 4x

Breadth = x

$\Rightarrow$ 2 × (4x + x) = 50

2 × 5x = 50

x = 5m

Length = 4 × 5 = 20m, breadth = 5m

13. Area of rectangle = Area of square

36 × b = 24 × 24

$b = \frac{24 \times 24}{36}$ = b = 16 m

Perimeter of square = 4 × 24 = 96 m

Perimeter of rectangle = 2 × (36 + 16) = 2 × (52) = 104 m

14. Area of carpet = 5.4 × 4.1 = 22.14 m^2

Cost of the carpet = 325 × 22.14 = ₹ 7195.5

15. Area of ground = 45 × 30 = 1350 m^2

Cost of leveling a ground = 12 × 1350 = ₹ 16,200

16. Perimeter of rectangular field = $2 \times (34.2 + 16.3)$
$= 2 \times (50.5)$
$= 101.0 = 101$ m
Cost of fencing $= 40 \times 101 = ₹\ 4{,}040$
Area of Field $= 34.2 \times 16.3 = 557.46\ m^2$
Cost of turfing $= 21 \times 557.46 = ₹\ 11{,}706.66$

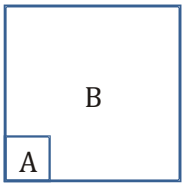
17. Area of Square $= a^2$
Area of new Square $= (2a)^2 = 4a^2$
Area becomes 4 times

18. Actual length of stick = 90 cm, Number of sticks = 25
Length of side $= 25 \times \frac{90}{100}$ m
$= 22.5$ m
Area of square field $= 22.5 \times 22.5 = 506.25\ m^2$

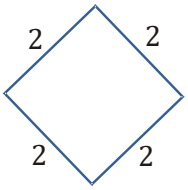
19. (i) Total number of tiles $= \frac{200 \times 144}{12 \times 5}$
$= 480$ tiles
(ii) Total number of tiles $= \frac{80 \times 48}{12 \times 5} = 64$ tiles

20. Area of remaining part of the land = Area of land – Total area of flower bed
$= 7 \times 5 - 4 \times (1 \times 1) = 35 - 4 = 31\ m^2$

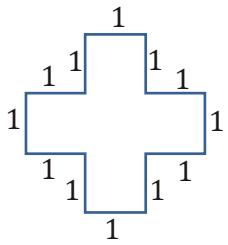
21. A lies completely in B



22. Area of Square $= (2)^2$
$= 4$ Square units

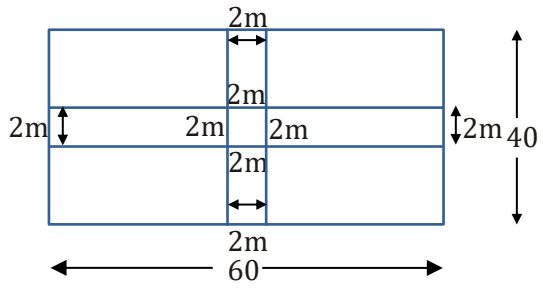


Area of five Square $= 5 \times (1 \times 1) = 5$ sq. unit



Area of square $= (2)^2$
$= 4$ sq. units
Total area of figure $= 4 + 5 + 4 = 13$ sq. units

23. Area of path = 2 × 60 + 2 × 40 – 2 × 2



= 120 + 80 – 4 = 196 m^2

Area of the remaining part of the park = 60 × 40 – 196 = 2400 –196 = 2204 m^2

24. (i) Not possible

(ii) Possible

25. Number of envelopes = $\frac{500\times300}{20\times30} = \frac{150000}{600}$

$= \frac{1500}{6} = \frac{750}{3}$

Number of envelopes = 250.