

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

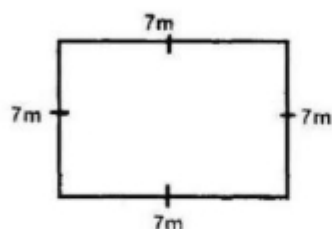
Unit No: 8

Perimeter and Area

Exercise No: 1

Q1: Find the perimeter of the given square.

(a)



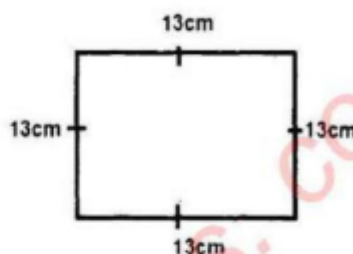
Sol:

Length of side = $L = 7\text{m}$

Perimeter of square = $4 \times L$
 $= 4 \times 7$

Perimeter of square = 28m

(b)



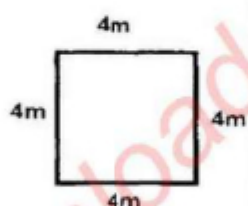
Sol:

Length of side = $L = 13\text{cm}$

Perimeter of square = $4 \times L$

Perimeter of square = 52cm

(c)



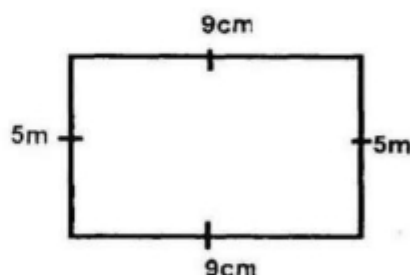
Sol:

Length of side = $L = 4\text{cm}$

Perimeter of square = $4 \times L$
 $= 4 \times 4$

Perimeter of square = 16m

Q2: Find the perimeter of the given rectangles.



(a) Sol:

Length of rectangle = $L = 9\text{cm}$

Width of rectangle = $W = 5\text{cm}$

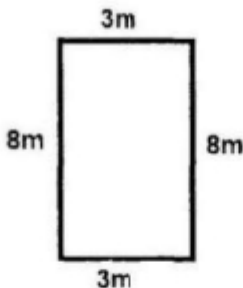
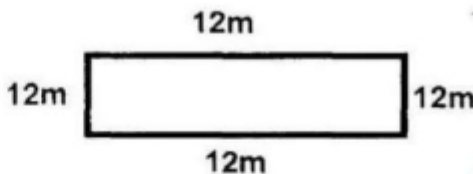
Perimeter of rectangle = $2(L + W)$

$= 2(9 + 5)$

$= 2(14)$

Perimeter of rectangle = 28cm

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(b)  Sol: Length of rectangle=$L=8m$ Width of rectangle=$W=3m$ Perimeter of rectangle=$2(L+W)$ $=2(8+3)$ $=2(11)$ Perimeter of rectangle=$22m$	(c) 12m  Sol: Length of rectangle=$L=12m$ Width of rectangle=$W=2m$ Perimeter of rectangle=$2(L+W)$ $=2(12+2)$ $=2(14)$ Perimeter of rectangle=$28m$
Q3: If the length of a square shaped crop field is 29 m, what will be its length? Sol: Length of side of square field=$L=29m$ Perimeter of square field $=4 \times L \Rightarrow 4 \times 29$ Perimeter of square field $\Rightarrow 116m$	Q4: The perimeter of the squares of given lengths by using formula. Sol: Perimeter of square=$72cm$ Length of side $=L=?$ Now Perimeter of square $=72cm$ $4 \times L = 72cm$ $\frac{4 \times L}{4} = \frac{72}{4}cm$ So length of side. $18cm$

Q5: Find the perimeter of the squares of given lengths by using formula:

(a) 5cm

$$\begin{aligned} \text{Perimeter of square} &= 4 \times L \\ &= 4 \times 5 \end{aligned}$$

$$\text{Perimeter of square} = 20cm$$

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(b) 12m

Length of rectangle = $L = 12\text{m}$

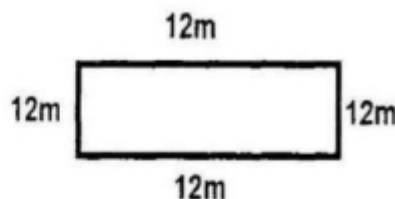
Width of rectangle = $W = 2\text{m}$

Perimeter of rectangle = $2(L + W)$

$= 2(12 + 2)$

$= 2(14)$

Perimeter of rectangle = 28m



(c) 6m Sol: Perimeter of square = $4 \times L$ $= 4 \times 6$ So, Perimeter of square = 24m	(d) 19cm Sol: Perimeter of square = $4 \times L$ $= 4 \times 19$ So, Perimeter of square = 76cm
(e) 26m Sol: Perimeter of square = $4 \times L$ $= 4 \times 26$ So, Perimeter of square = 104cm	(f) 2.5cm Sol: Perimeter of square = $4 \times L$ $= 4 \times 2.5$ So, Perimeter of square = 10cm
(g) 9.7m Sol: Perimeter of square = $4 \times L$ $= 4 \times 9.7$ So, Perimeter of square = 38.8cm	(h) 15m Sol: Perimeter of square = $4 \times L$ $= 4 \times 15$ So, Perimeter of square = 60m
(i) 16.6cm Sol: Perimeter of square = $4 \times L$ $= 4 \times 16.6$ So, Perimeter of square = 66.4cm	(j) 10m Sol: Perimeter of square = $4 \times L$ $= 4 \times 10$ So, Perimeter of square = 40cm
(k) 7.1cm Sol: Perimeter of square = $4 \times L$ $= 4 \times 7.1$ So, Perimeter of square = 28.4cm	(l) 2.7cm Sol: Perimeter of square = $4 \times L$ $= 4 \times 2.7$ So, Perimeter of square = 10.8cm

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Q6: Find the perimeter of the rectangles of the given lengths and widths by using formula. (a) $L=3\text{cm}$, $W=2\text{cm}$ Sol: Perimeter of rectangle $=2(L+W)$ $=2(3+2)$ $=2(5)$ Perimeter of rectangle $=10\text{cm}$	(b) $L=5.3\text{m}$, $W=2.2\text{m}$ Sol: perimeter of rectangle $=2(L+W)$ $=2(5.3+2.2)$ $=2(7.5)$ Perimeter of rectangle $=15\text{m}$
(c) $L=6\text{cm}$, $W=4\text{cm}$ Sol: perimeter of rectangle $=2(L+W)$ $=2(6+4)$ $=2(10)$ Perimeter of rectangle $=20\text{cm}$	(d) $L=9\text{m}$, $W=1.2\text{m}$ Sol: perimeter of rectangle $=2(L+W)$ $=2(9+1.2)$ $=2(10.2)$ Perimeter of rectangle $=20.4\text{m}$
(e) $L=10\text{m}$, $W=5.9\text{m}$ Sol: perimeter of rectangle $=2(L+W)$ $=2(10+5.9)$ $=2(15.9)$ Perimeter of rectangle $=31.8\text{m}$	(f) $L=15\text{cm}$, $W=12\text{cm}$ Sol: perimeter of rectangle $=2(L+W)$ $=2(15+12)$ $=2(27)$ Perimeter of rectangle $=54\text{cm}$

7: Children are playing in a square shaped playground. If the length of the playground is 12 meters, find its perimeter.

Length of playground $=L=12$
 $4 \times 12 = 48$

Perimeter of playground $=4 \times L$
 Perimeter of playground $=48\text{m}$

8. Harris wants to find out the perimeter of the square-shaped notice board in his classroom. If the length of one side of the notice board is 2.5 meters, find the perimeter of the board.

Length of notice board $=L=2.5$

Perimeter of square shaped notice board $=4 \times L$
 $=4 \times 2.5$

Perimeter of notice board $=10\text{m}$

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9. If a rectangular room is 10.8 meters long and 8.8 meters wide. Find the perimeter of the room.

Length of room = $L = 10.8$ m Width of room = $W = 8.8$ m
Perimeter of room = $2 (L \times W)$ $= 2 (10.8 \times 8.8) \Rightarrow 2 (19.6)$
Perimeter of room = 39.2 m

10. Nadia has a rectangular frame. The frame is 12cm long and 8 cm wide. Nadia wants to put a ribbon around the frame.

(a) Find the required length of the ribbon.

Length of frame = $L = 12$ cm Width of frame = $W = 8$ cm
(a) Length of ribbon = Perimeter of frame = $2(L+W)$
 $= 2 (12+8) = > 2(20) = 40$ cm
So required ribbon for frame = 40 cm

10 (b) What will be the total cost of ribbon if 1 meter of it costs Rs.5.

Cost of 1 cm ribbon = Rs. 5 Cost of 40 meter ribbon = 40×5
Cost of 40 meter ribbon = Rs. 200

11. A building is 128 meters long and 96.5 meters wide.

(a) Find out its perimeter.

Length of building = $L = 128$ m Width of building = $W = 96.5$ m
Perimeter of building = $2 (L \times W)$ $= 2 (128 + 96.5)$
 $= 2 (224.5) = >$
Perimeter of building = 449 m.

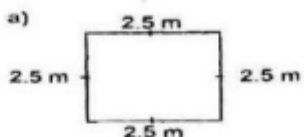
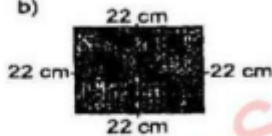
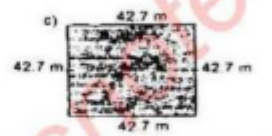
11.(b) Find the total cost required for the construction of boundary wall around this building if the rate of construction of wall is Rs. 470 per meter.

Perimeter of building = 449 m.
Cost of 1 m boundary wall = Rs. 470
Cost of construction of 449 m boundary wall = $470 \times 449 =$
 $= \text{Rs. } 211,030$

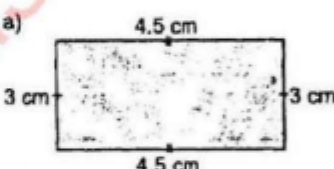
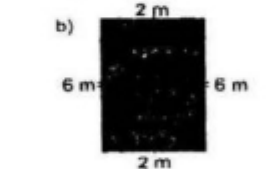
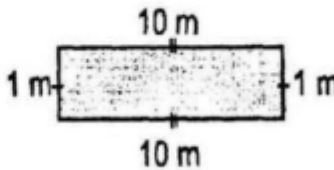
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Exercise No: 2

Find the area of the given squares.

(a) Length of a side = $L = 2.5$ cm Area of square = $L \times L$ $= 2.5 \times 2.5 =$ Area of square = 6.25 cm^2	a) 
(b) Length of a side = $L = 22$ cm Area of square = $L \times L$ $= 22 \times 22 =$ Area of square = 484 cm^2	b) 
© Length of a side = $L = 42.7$ cm Area of square = $L \times L$ $= 42.7 \times 42.7 =$ Area of square = 1823.29 cm^2	c) 

2. Find the area of given rectangles.

(a) Length of rectangle = $L = 4.5$ Width of rectangle = $W = 3$ cm Area of rectangle = $L \times W$ $= 4.5 \times 3 =$ Area of square = 13.5 cm^2	a) 
(b) Length of rectangle = $L = 6$ m Width of rectangle = $W = 2$ m Area of rectangle = $L \times W$ $= 6 \times 2 =$ Area of square = 12 m^2	b) 
© Length of rectangle = $L = 10$ m Width of rectangle = $W = 1$ m Area of rectangle = $L \times W$ $= 10 \times 1 =$ Area of square = 10 m^2	

3. The area of a rectangle is 96 m^2 . If its width is 3m, find its length.

Area of rectangle = $L = 96 \text{ m}^2$
 Area of rectangle = $L \times W$

Width of rectangle = $W = 3 \text{ m}$
 $L \times W = 96 \text{ m}^2$

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Sol: Length of rectangle= L=?

Area of rectangle=96m

Width of rectangle= W=3m

$$=L \times W = 96m^2$$

$$=L \times 3m = 96m^2$$

$$= \frac{L \times 3m}{3m} = \frac{96m^2}{3m}$$

$$=L=32m$$

Q4: Find the area of the square of the given length by using formula.

(a) 4.5 m Sol: area of square= $L \times L$ $=4.5 \times 4.5$ Area of square= $20.25m^2$	(e) 13cm Sol: area of square= $L \times L$ $=13 \times 13$ Area of square= $169cm^2$
(b) 9.3cm Sol: area of square= $L \times L$ $=9.3 \times 9.3$ Area of square= $86.49cm^2$	(f) 3cm Sol: area of square= $L \times L$ $=3 \times 3$ Area of square= $9m^2$
(c) 8.8cm Sol: area of square= $L \times L$ $=8.8 \times 8.8$ Area of square= $77.44m^2$	(g) 6m Sol: area of square= $L \times L$ $=6 \times 6$ Area of square= $36m^2$
(d) 15cm Sol: area of square= $L \times L$ $=15 \times 15$ Area of square= $225cm^2$	(h) 2.9m Sol: area of square= $L \times L$ $=2.9 \times 2.9$ Area of square= $8.41m^2$
(i) 5 cm Sol: area of square= $L \times L$ $=5 \times 5$ Area of square= $25cm^2$	(j) 9.2m Sol: area of square= $L \times L$ $=9.2 \times 9.2$ Area of square= $86.64m^2$
(k) 14m Sol: area of square= $L \times L$ $=14 \times 14$ Area of square= $196m^2$	(l) 1.1 m Sol: area of square= $L \times L$ $=1.1 \times 1.1$ Area of square= $1.21m^2$

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Q5: Find the area of the rectangle of the given length and width by using formula.

(a) L=5cm, W=1.9cm Sol: Area of rectangle= $L \times W$ $= 5 \times 1.9$ Area of rectangle = 9.5cm^2	(b) L=4m, W=3m Sol: Area of rectangle= $L \times W$ $= 4 \times 3$ Area of rectangle = 12m^2
(c) L=6cm, W=4cm Sol: Area of rectangle= $L \times W$ $= 6 \times 4$ Area of rectangle = 24cm^2	(d) L=7cm, W=5cm Sol: Area of rectangle= $L \times W$ $= 7 \times 5$ Area of rectangle = 35cm^2
(e) L=10.5cm, W=9cm Sol: Area of rectangle= $L \times W$ $= 10.5 \times 9$ Area of rectangle = 94.5cm^2	(f) L=20m, W=17m Sol: Area of rectangle= $L \times W$ $= 20 \times 17$ Area of rectangle = 340m^2

Q6: A rectangular shaped ground has a length of 122m and width 108m. Find the area of the ground.

Sol: length of ground = $L = 122\text{m}$ Width of ground = $W = 108\text{m}$
 Area of ground = $L \times W$ $= 122 \times 108$
 Area of ground = 13176m^2

7. The area of a school's main gate is 19.55 m^2 .

(a) If the width of the gate is 2.3 m find its length.

(a) Width of school gate = $W = 2.3\text{m}$ Length of school gate = $L = ?$
 Area of school gate = 19.55m^2 Area of main gate = $L \times W$
 $L \times W = 19.55\text{ m}^2$ $19.55\text{ m}^2 = L \times 2.3\text{m}$

$$\frac{L \times 2.3\text{m}}{2.3\text{m}} = \frac{19.55\text{m}^2}{2.3\text{m}}$$

$$= \frac{1955 \times 10}{23 \times 10} = \frac{391 \times 1955}{230} = \frac{391}{46} = L = 8.5\text{m}$$

Sol: length of school gate = 8.5

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(b) Find the cost of painting the gate if the rate of painting is Rs 275 per m².

Cost of 1m painting=275 Rs

Cost of 19.55m² Painting= 19.55x275
=5376.25 Rs

8. Area of a masjid is 27540 m² and its length is 255 m. Calculate.

a) The perimeter of the masjid.

Sol (a) Length of Masjid= L=255m Width of masjid=w=?

Area of masjid=27540m²

LxW=27540m²

25.5xW= 27540m²

$$\frac{255m \times W}{255m} = \frac{27540}{255} m^2$$

$$W = \frac{5508^{1836}}{51_{17}} m$$

$$= \frac{1836}{17} m$$

W=108m

Now; Perimeter of masjid= 2(L+W)
=2(255+108)
=2(363)

Perimeter of masjid=726m

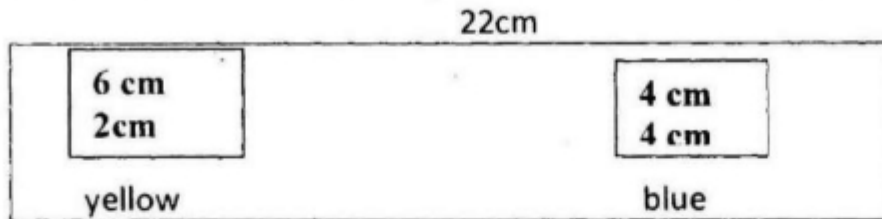
b) The cost of carpeting the masjid if the rate of carpeting is Rs 275 per m².

(b) Cost of carpeting 1m²=275 Rs

Cost of carpeting 27540m²=27540x275
=7573500 Rs

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9. Find the area of the blue part.



Length of white part = $L_1 = 6\text{cm}$ Width of white part = $W_1 = 2\text{cm}$

Area of white part = $L_1 \times W_1$

$$= 6 \times 2$$

Area of white part = 12cm^2

Length of red part = $L_2 = 4$

Area of red part = $L_2 \times W_2$

$$= 4 \times 4 = 16\text{cm}^2$$

Length of blue part = $L_3 = 22\text{cm}$ Width of blue part = $W_3 = 10\text{cm}$

Total: Area of blue part with white and red = $L_3 \times W_3$
 $= 22 \times 10 = 220\text{cm}^2$

Blue part = total area = area of white part + area of red part
 $= 220 - 12 - 16$
 $= 192\text{cm}^2$

Review Exercise

Q1: Encircle the correct option.

(a) If the length of a rectangle is 4cm and width is 3.4cm

Then its perimeter will be equal to 14.8cm.

(i) 11.4cm (ii) 7.4cm (iii) 14.8cm (iv) 10.8cm

(b) Formula to find the perimeter of the square is

(i) $4 \times l$ (ii) $4 \times l$ (iii) $4L$ (iv) 4

(c) The formula to find the perimeter of the rectangle is :

(i) $2(L+W)$ (ii) $2L+W$ (iii) $L+2W$ (iv) $L+W$

(d) Area of rectangle is 45m^2 if its length is 15m then its width is

(i) 6m (ii) 3m (iii) 5m (iv) 15m

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(e) The formula to find the area of the square is :

(i) $L \times L$ (ii) $2(L+W)$ (iii) $L+2W$ (iv) $4L$

(f) the formula to find the area of the rectangle is $L \times W$

(i) $L \times L$ (ii) $2(L+W)$ (iii) $L+2W$ (iv) $4L$

(g) If the perimeter of the rectangle is 34cm and we increase its length by 2cm then there will be difference of 4cm in its perimeter.

(i) 2 (ii) 4 (iii) 8 (iv) 6

(h) If the length of one side of the square is 24cm then its perimeter will be 56cm.

(i) 14cm (ii) 56cm (iii) 256cm (iv) 28cm

Q2: Find the perimeter of area of the squares of the given length by using formula.

(a) $L = 8.2\text{cm}$ Sol: Perimeter of square = $4 \times L$ $= 4 \times 8.2$ Perimeter of square = 32.8cm Area of square = $L \times L$ $= 8.2 \times 8.2$ Area of square = 63.24	(b) $L = 2.6\text{m}$ Perimeter of square = $4 \times L$ $= 4 \times 2.6$ Perimeter of square = 10.4m Area of square = $L \times L$ $= 2.6 \times 2.6$ Area of square = 6.76m^2
(c) $L = 12.8\text{m}$ Perimeter of square = $4 \times L$ $= 4 \times 12.8$ Perimeter of square = 51.2m Area of square = $L \times L$ $= 12.8 \times 12.8$ $= 163.84\text{m}^2$	(d) $L = 7.9\text{cm}$ Area of square = $4 \times L$ $= 4 \times 7.9$ Perimeter of square = 31.6cm Area of square = $L \times L$ $= 7.9 \times 7.9$ $= 62.41\text{cm}^2$
(e) $L = 16\text{cm}$ Area of square = $4 \times L$ $= 4 \times 16$	(f) $L = 4.3\text{m}$ Area of square = $4 \times L$ $= 4 \times 4.3$

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Perimeter of square= 64cm Area of square=LxL =16x16 Area of square =256cm ² .	Perimeter of square= 17.2m Area of square=LxL =4.3x4.3 Area of square =18.49m ² .
(g)L=5.7m Area of square=4xL =4x5.7 Perimeter of square= 22.8m Area of square=LxL =5.7x5.7 Area of square =32.49m ² .	(h) L=11cm Area of square=4xL =4x11 Perimeter of square= 44cm Area of square=LxL =11x11 Area of square =121cm.

Q3: Find the perimeter and area of rectangle of the given length and width by using formula.

(a)L=6cm . W=3.4cm Sol: Perimeter of rectangle=2(L+W) =2(6+3.4) =2(9.4) Perimeter of rectangle=18.8cm Area of rectangle = LxW =6x3.4 Area of rectangle =20.4cm	(b) L=1.2 , W=0.3m Sol: Perimeter of rectangle=2(L+W) =2(1.2+0.3)=2(1.5) Perimeter of rectangle=3m Area of rectangle = LxW =1.2x0.3 Area of rectangle =0.36m ² .
(c)L=10cm , W=13cm Sol: Perimeter of rectangle=2(L+W) =2(10+13) =2(23) Perimeter of rectangle=64cm Area of rectangle = LxW =10x13 Area of rectangle =130cm	(d) L=17cm . W=8.5cm Sol: Perimeter of rectangle=2(L+W) =2(17+8.5) =2(25.5) Perimeter of rectangle=51cm Area of rectangle = LxW =17x8.5 Area of rectangle =144.5cm ² .

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4. The perimeter of a book is 100 cm. If its width is 22 cm, find its length. Sol: Width of book = $W = 22\text{cm}$ Length of book = $L = ?$ Perimeter of rectangle = 100cm $2(L + W) = 100$ $2(L + 22) = 100$ $\frac{2(L + 22)}{2} = \frac{100}{2}$ $L + 22 = 50$ $L + 22 - 22 = 50 - 22$ $L = 28\text{cm}$ So length of book = 28cm	5. Laiba wants tiling of the floor of her kitchen. If the length of the kitchen is 12 meters and width is 10 meters then: (a) Calculate the area of the kitchen Sol: Length of kitchen = $L = 12\text{cm}$ Width of kitchen = $W = 10\text{m}$ Tiling of kitchen = Area of kitchen $= L \times W$ $= 12 \times 10$ Tiling of kitchen = 120m^2.
6. The length of the fence around a square shaped garden is 24 m. Find the length of the garden. Length of garden = $L = ?$ Length of fence = 24m So Perimeter of garden = 24m $4 \times L = 24\text{m}$ $\frac{4 \times L}{4} = \frac{24}{4}\text{m}$ $L = 6\text{m}$	Q5: (b) how many tiles will be required, if length of each square tile is 2 metres? Area of tile = $L \times L = 2 \times 2 = 4\text{cm}^2$ Total required tile = $\frac{\text{Area of kitchen}}{\text{Area of tile}}$ $= \frac{120}{4}$ Total required tiles. 30
7. Daniya took a 42 cm long ribbon and made a rectangle with it. If the length of the rectangle is 15 cm, then find its width. Length of rectangle = $L = 15\text{cm}$ Width of rectangle = $W = ?$	8. Find the area of the carom board whose perimeter is 40 cm. Length of carom board = $L = ?$ Perimeter of carom board = 40cm $4 \times L = 40$

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Perimeter of rectangle=42cm $2(L+W)=42$ $\frac{2(15+W)}{2} = \frac{42}{2}$ $15+W=21$ $15+15+W=21+15$ $W=6\text{cm}$	$\frac{4 \times L}{4} = \frac{40}{4}$ $L=10$ So, length of carom board = $L=10\text{cm}$ Area of carom board = $L \times L$ $=10 \times 10$ Area of carom board = 100cm^2
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Unit: 9

Data Handling
 Exercise No: 1

Q1: Find the average of the following .

(a) 4, 13, 25, 32, 42, 52 $\text{Average} = \frac{\text{Sum of quantities}}{\text{Number of quantities}}$ $\text{Sol} = \frac{4+13+25+32+42+52}{6}$ $= \frac{168}{6}$ Average = 28	(b) 12 kg, 16 kg, 26kg, 42 kg $\text{Sol: Average} = \frac{\text{Sum of quantities}}{\text{Number of quantities}}$ $\frac{12\text{kg}+16\text{kg}+26\text{kg}+42\text{kg}}{4}$ $= \frac{96}{4}$ Average = 24kg
(c) 10cm, 13cm, 17cm, 16cm, 9cm Sol: $\text{Average} = \frac{\text{Sum of quantities}}{\text{Number of quantities}}$ $\frac{10\text{cm}+13\text{cm}+17\text{cm}+16\text{cm}+9\text{cm}}{5}$ $= \frac{75}{5}$ = Average = 15 cm	(d) 5ℓ, 15 ℓ, 30 ℓ, 35 ℓ, 40 ℓ $\text{Sol: Average} = \frac{\text{Sum of quantities}}{\text{Number of quantities}}$ $\frac{5\ell+15\ell+30\ell+35\ell+40\ell}{5}$ $= \frac{115}{5}$ = Average = 23

