

Exercise 17.1

Q 1.

a) Perimeter of given figure

= Sum of all sides

$$= 4+4+2+2+6+4$$

$$= 22 \text{ cm}$$

b) Perimeter of given figure

= Sum of all sides

$$= 7+4+2+6+3$$

$$= 22 \text{ cm}$$

c) Perimeter of given figure

= Sum of all sides

$$= 6+3+2.5+4$$

$$= 15.5 \text{ cm}$$

d) Perimeter of given figure

= Sum of all sides

$$= 3+4+2.5+1.5+4.5+3$$

$$= 18.5 \text{ cm}$$

Q 2.

a) Perimeter of equilateral triangle

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

$$= 3 \times 9$$

$$= 27 \text{ cm}$$

b) Perimeter of square

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

$$= 4 \times 19$$

$$= 76 \text{ cm}$$

b) Length = 11 cm

Breadth = 10 cm

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

$$= 2(11 + 10)$$

$$= 2(21)$$

$$= 42 \text{ cm}$$

c) Perimeter of a triangle = sum of all sides

$$= 21+17+11$$

$$= 49 \text{ cm}$$

d) Perimeter of a hexagon

$$= 6 \times \text{side}$$

$$= 6 \times 11$$

$$= 66 \text{ cm}$$

e) Perimeter of pentagon = 5 x side

$$= 5 \times 9$$

$$= 45 \text{ cm}$$

Q 3.

Perimeter of equilateral triangle = 150 cm

$$\text{➤ } 3 \times \text{side} = 150$$

$$\text{➤ } \text{Side} = 150/3$$

$$\text{➤ } \text{Side} = 50 \text{ m}$$

Q 4.

Length = 95 m

Breadth = 33 m

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

$$= 2(95 + 33)$$

$$= 2(128)$$

$$= 256 \text{ m}$$

He completed eight rounds,

Therefore, perimeter = 8×256

$$= 2048 \text{ m}$$

So, he covers 2048 m distance.

Q 5.

Measurement of equal sides = 15 cm each

Perimeter of isosceles triangle = 2 x side + other side

$$60 = 2 \times 15 + \text{other side}$$

$$30 = \text{other side}$$

Length of third side = 30 cm

Q 6.

Perimeter of Moksha's garden = $2(L+B)$

$$= 2(65+14)$$

$$= 158 \text{ m}$$

Perimeter of Sonu's garden = $2(L+B)$

$$= 2(58+15)$$

$$= 146 \text{ m}$$

the total length of cane required to fence both the gardens

$$= 158 + 146 = 304 \text{ m}$$

Q 7.

Perimeter of a regular pentagon = 955 cm

$$\text{➤ } 5 \times \text{side} = 955$$

$$\text{➤ } \text{Side} = 955/5$$

$$\text{➤ } \text{Side} = 191 \text{ cm}$$

Q 8.

Let the breadth be x

And length be 4x

Perimeter of rectangular ground = $2(L+B)$

$$\text{➤ } 220 = 2(x + 4x)$$

$$\text{➤ } 220 = 2 \times 5x$$

$$\text{➤ } 220/10 = x$$

$$\text{➤ } x = 22$$

$$\text{breadth} = 22 \text{ m}$$

$$\text{length} = 88 \text{ m}$$

$$\text{cost of fencing} = 35 \times 220$$

$$= ₹7700$$

Q 9.

$$\text{Side} = 14 \text{ cm}$$

Perimeter of an equilateral triangle = $3 \times \text{side}$

$$= 3 \times 14$$

$$= 42 \text{ cm}$$

Perimeter of a regular heptagon = $6 \times \text{side}$

$$\text{➤ } 42 = 6 \times \text{side}$$

$$\text{➤ } \text{Side} = 7 \text{ cm}$$

Q 10.

Total length of a rope = 80 cm

Perimeter of a square = $4 \times \text{side} = 4 \times 10 = 40 \text{ cm}$

Therefore, the other length of rope is $(80 - x) \text{ cm}$

$$= 80 - 40$$

$$= 40 \text{ cm}$$

Perimeter of octagon = $8 \times \text{side}$

$$\text{➤ } 40 = 8 \times \text{side}$$

$$\text{➤ } \text{Side} = 5 \text{ cm}$$

Length of each side of Octagon = 5 cm

Exercise 17.2

Q 1.

(a) $l = 11 \text{ cm}$ and $b = 8 \text{ cm}$

$$\begin{aligned}\text{Area of rectangle} &= l \times b \\ &= 11 \times 8 \\ &= 88 \text{ cm}^2\end{aligned}$$

(b) $l = 35 \text{ m}$ and $b = 21 \text{ m}$

$$\begin{aligned}\text{Area of rectangle} &= l \times b \\ &= 35 \times 21 \\ &= 735 \text{ m}^2\end{aligned}$$

(c) $l = 14 \text{ m}$ and $b = 6.5 \text{ cm} = 6.5/100 \text{ m} = 0.065 \text{ m}$

$$\begin{aligned}\text{Area of rectangle} &= l \times b \\ &= 14 \times 0.065 \\ &= 0.91 \text{ m}^2\end{aligned}$$

(d) $l = 9 \text{ m}$ and $b = 2.7 \text{ cm} = 2.7/100 \text{ m} = 0.027 \text{ m}$

$$\begin{aligned}\text{Area of rectangle} &= l \times b \\ &= 9 \times 0.027 \\ &= 0.243 \text{ m}^2\end{aligned}$$

Q 2.

(a) 19 cm

$$\begin{aligned}\text{Area of a square} &= \text{side} \times \text{side} \\ &= 19 \times 19 \\ &= 361 \text{ cm}^2\end{aligned}$$

(b) 78 cm

$$\begin{aligned}\text{Area of a square} &= \text{side} \times \text{side} \\ &= 78 \times 78 \\ &= 6084 \text{ cm}^2\end{aligned}$$

(c) $3 \text{ m } 45 \text{ cm}$

$$\begin{aligned}\text{Area of a square} &= \text{side} \times \text{side} \\ &= 3.45 \times 3.45 \\ &= 11.9025 \text{ m}^2\end{aligned}$$

(d) 12.1 m

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

$$\begin{aligned}&= 12.1 \times 12.1 \\ &= 146.41 \text{ m}^2\end{aligned}$$

Q 3.

Perimeter of a square field = 240 m

$$\text{➤ } 4 \times \text{side} = 240$$

$$\text{➤ Side} = 240/4$$

$$\text{➤ Side} = 60 \text{ m}$$

Area of a square field = side \times side

$$= 60 \times 60$$

$$= 3600 \text{ m}^2$$

Q 4.

Length = 22 m

Breadth = 14 m

Area of room = length \times breadth

$$= 22 \times 14$$

$$= 308 \text{ m}^2$$

Area of one tile = side \times side

$$= 40 \times 40$$

$$= 1600 \text{ cm}^2 = 0.16 \text{ m}^2$$

Number of tiles = $308/0.16$

$$= 1925$$

Q 5.

Area of painting a wall = 670×110

$$= 73700 \text{ cm}^2$$

$$= 73700/10000$$

$$= 7.37 \text{ m}^2$$

Cost of painting = 7.1×7.37

$$= ₹52.327$$

Q 6.

Breadth of one rectangular table = 2 m

Breadth of three rectangular tables = 6 m

Length of rectangular table = 5 m

Area of combined tables of Sunita = 5×6

$$= 30 \text{ m}^2$$

Q 7. Mr Sanyal bought a mirror of length 45.5 cm and breadth 26 cm.

Area of mirror = $L \times B$

$$= 45.5 \times 26$$

$$= 1183 \text{ cm}^2$$

Q 8.

Length = 240 m

Breadth = 1.5 m

$$\begin{aligned}\text{Area of three footpaths} &= 3 \times 240 \times 1.5 \\ &= 1080 \text{ m}^2\end{aligned}$$

$$\begin{aligned}\text{Area of concrete slabs} &= 60 \times 60 \\ &= 3600 \text{ cm}^2 \\ &= 0.3600 \text{ m}^2\end{aligned}$$

$$\begin{aligned}\text{Number of slabs} &= 1080/0.3600 \\ &= 3000\end{aligned}$$

Q 9.

$$\begin{aligned}\text{Area of rectangular field} &= \text{length} \times \text{breadth} \\ &= 25 \times 12 \\ &= 300 \text{ m}^2\end{aligned}$$

$$\begin{aligned}\text{Area of a house with square base} &= \text{side} \times \text{side} \\ &= 11 \times 11 \\ &= 121 \text{ m}^2\end{aligned}$$

$$\begin{aligned}\text{Area of field which is not covered} &= 300 - 121 \\ &= 179 \text{ m}^2\end{aligned}$$

Q 10.

$$\begin{aligned}\text{Perimeter of the floor of the bathroom(square)} \\ &= 320 \text{ cm}\end{aligned}$$

- $4 \times \text{side} = 320$
- $\text{Side} = 320/4$
- $\text{Side} = 80 \text{ cm}$

$$\begin{aligned}\text{Area of the square floor} &= 80 \times 80 \\ &= 6400 \text{ cm}^2\end{aligned}$$

$$\text{Area of one square tile} = 8 \times 8 = 64 \text{ cm}^2$$

$$\begin{aligned}\text{Number of square tiles} &= 6400/64 \\ &= 100\end{aligned}$$

$$\text{One tile cost} = ₹50$$

$$\begin{aligned}\text{Cost of square tiles} &= ₹50 \times 100 \\ &= ₹5000\end{aligned}$$

Q 11.

$$\begin{aligned}\text{Area of outer rectangle} &= \text{length} \times \text{breadth} \\ &= 20.2 \times 12 \\ &= 242.4 \text{ m}^2\end{aligned}$$

$$\text{Area of inner rectangle} = \text{length} \times \text{breadth}$$

$$= 8 \times 16.2$$

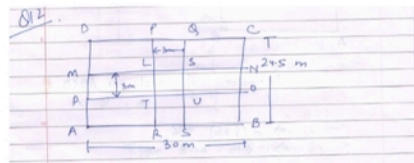
$$= 129.6 \text{ m}^2$$

Area of shaded region

$$= 242.4 - 129.6$$

$$= 112.8 \text{ m}^2$$

Q12.



Area of PQSR = length \times breadth
 $= PQ \times QS$
 $= 3 \times 24.5$
 $= 73.5 \text{ m}^2$

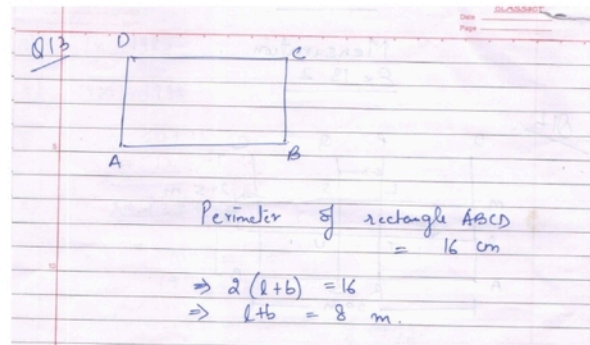
Area of MNOP = length \times breadth
 $= MP \times MN$
 $= 3 \times 30$
 $= 90 \text{ m}^2$

Area of LSTU = length \times breadth
 $= LS \times LT$
 $= 3 \times 3 = 9 \text{ m}^2$

Area of roads = $(73.5 + 90) - 9$
 $= 154.5 \text{ m}^2$

Cost of repairing the roads = 17.8×154.5
 $= \text{Rs } 2750.1$

Q 13.



Q 14.

The length and the breadth of a rectangle are in the ratio of 3:2. If the perimeter of the rectangle is 120 m.

$$\text{Perimeter} = 2(l+b)$$

$$\Rightarrow 120 = 2(3x+2x)$$

$$\Rightarrow 60 = 5x$$

$$\Rightarrow x = 12$$

$$\text{length} = 3x = 3 \times 12 = 36 \text{ m}$$

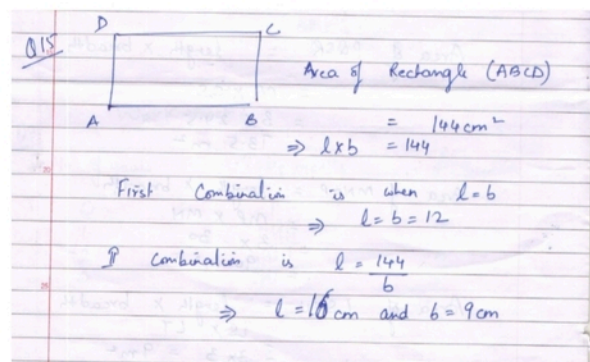
$$\text{breadth} = 2x = 2 \times 12 = 24 \text{ m}$$

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

$$= 36 \times 24$$

$$= 864 \text{ m}^2$$

Q 15.



Q 10.

Area of rectangular field = length x breadth

$$= 360 \times 250$$

$$= 90000 \text{ m}^2$$

$$10000 \text{ m}^2 = 1 \text{ hectare}$$

$$1 \text{ m}^2 = 1/10000 \text{ hectare}$$

$$90000 \text{ m}^2 = 1/10000 \times 90000$$

$$= 9 \text{ hectare}$$

$$1 \text{ hectare} = 20 \text{ quintals}$$

$$9 \text{ hectare} = 180 \text{ quintals}$$

$$1 \text{ quintal costs} = ₹1500$$

$$180 \text{ quintal costs} = ₹1500 \times 180 = ₹270000$$

Q17.

Perimeter of a square = 4 x side

$$= 4 \times 50 = 200 \text{ m}$$

Perimeter of a rectangle = 2(L+B)

$$= 2(L+36) \text{ m}$$

Both the perimeters are equal,

$$200 = 2L + 72$$

$$\Rightarrow 128 = 2L$$

$$\Rightarrow L = 64 \text{ m}$$

$$\text{Area of square} = 50 \times 50 = 2500 \text{ m}^2$$

$$\text{Area of rectangle} = 36 \times 64$$

$$= 2304 \text{ m}^2$$

Greater area is of square and by (2500–2304)

$$= 196 \text{ m}^2$$

Perimeter

Perimeter of whole figure

$$= 8 + 2 + 7 + 7 + 10 + 7 + 3 + 8 + 14 + 9$$

$$= 10 + 14 + 17 + 11 + 23$$

$$= 75 \text{ cm}$$

Q 19.

Q20

(a) Area = 8 unit²

(b) Area = 11 unit²

(c) Area = 10 unit²

Q 20 Life skills