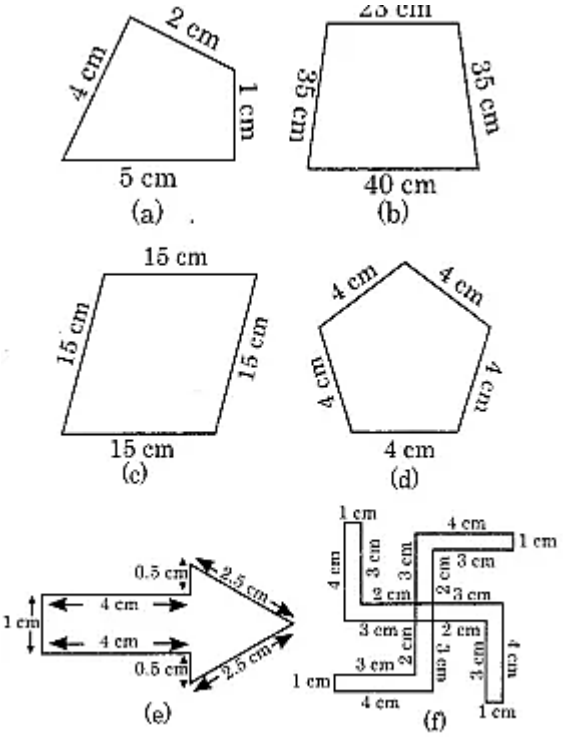
Board –CBSE	Class – 6th	Topic – Mensuration Ex: 10.1

Exercise 10.1

1. Find the perimeter of each of the following figures:



Ans. (a) Required perimeter

= 4 cm + 2 cm + 1 cm + 5 cm = 12 cm

(b) Required perimeter

= 40 cm + 35 cm + 23 cm + 35 cm

= 133 cm or 1.33 m

(c) Required perimeter

= 15 cm + 15 cm + 15 cm + 15 cm = 15 cm × 4 = 60 cm

(d) Required perimeter

= 4 cm + 4 cm + 4 cm + 4 cm + 4 cm – 4 cm × 5 = 20 cm

(e) Required perimeter

= 4 cm + 0.5 cm + 2.5 cm + 2.5 cm + 0.5 cm + 4 cm + 1 cm

= 15 cm

(f) Required perimeter = 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm

= 52 cm

2. The lid of a rectangular box of sides 40 cm by 10 cm is sealed all round with tape.

What is the length of the tape required?

Ans. Total length of the tape required = perimeter of the rectangular lid

= 2 [length + breadth] = 2 × [40 + 10]

= 2 × 50 = 100 cm

3. A table-top measures 2 m 25 cm by 1 m 50 cm. What is the perimeter of the tabletop?

Ans. Length of table-top = 2 m 25 cm

Breadth of table-top = 1 m 50 cm

∴ Perimeter of the table top = 2 [length + breadth]

= 2 [2 m 25 cm + 1 m 50 cm]

	2 m	25 cm
+	1 m	50 cm
	3 m	75 cm
		×2
	7 m	50 cm

= 2 × 3 m 75 cm

= 7 m 50 cm

= 7.5 m

4. What is the length of the wooden strip required to frame a photograph of length and breadth 32 cm and 21 cm respectively?

Ans. Length of the strip = 32 cm

Breadth of the strip = 21 cm

∴ Perimeter = 2 [length + breadth]

= 2 [32 cm + 21 cm]

= 2 × 53 cm = 106 cm

Hence, the required length of the strip = 106 cm or 1 m 6 cm.

5. A rectangular piece of land measures 0.7 km by 0.5 km. Each side is to be fenced with 4 rows of wires. What is the length of the wire needed?

Ans. Length of the rectangular piece of land = 0.7 km = 0.7 × 1000 m = 700 m

Breadth of the rectangular piece of land = 0.5 km = 0.5 × 1000 m = 500 m

∴ Perimeter of the rectangular land

= 2 [length + breadth]

= 2 [700 m + 500 m]

= 2400 m.

Length of wire needed in 4 rounds of the land = 4 × 2400 = 9600 m = 9.6 km.

6. Find the perimeter of each of the following shapes:

(a) A triangle of sides 3 cm, 4 cm, and 5 cm.

(b) An equilateral triangle of side 9 cm.

(c) An isosceles triangle with equal sides 8 cm each and third side 6 cm.

Ans. (a) We know that the perimeter of the given triangle = The sum of all sides of the triangle

∴ Perimeter of the triangle = 3 cm + 4 cm + 5 cm = 12 cm

(b) We know that the perimeter of the given triangle

= Sum of all the sides of the triangle

= (9 + 9 + 9) = 27 cm

(c) Perimeter of the given isosceles triangle

= Sum of all the sides of the triangle

= (8 + 8 + 6) cm = 22 cm

7. Find the perimeter of a triangle with sides measuring 10 cm, 14 cm, and 15 cm.

Ans. The perimeter of a triangle = Sum of all the sides of the triangle

= 10 cm + 14 cm + 15 cm

= 39 cm

8. Find the perimeter of a regular hexagon with each side measuring 8 m.

Ans. Perimeter of a regular hexagon = 6 × side = 6 × 8 m = 48 m.

9. Find the side of the square whose perimeter is 20 m.

Ans. The perimeter of a square = 4 × side

20 = 4 × side

∴ side = 20 m ÷ 4 = 5 m

10. The perimeter of a regular pentagon is 100 cm. How long is each side?

Ans. We have

Perimeter of the regular pentagon = 100 cm

Number of sides in regular pentagon = 5

∴ Length of each side = Perimeter ÷ Number of sides

= 100 cm ÷ 5 = 20 cm.

11. A piece of string is 30 cm long. What will be the length of each side if the string is used to form:

(a) a square?

(b) an equilateral triangle?

(c) a regular hexagon?

Ans. (a) Length of string = 30 cm

Number of equal sides in a square = 4

∴ Length of each side of the square = 30 cm ÷ 4 = 7.50 cm.

(b) Length of string = 30 cm

Number of equal sides in equilateral triangle = 3

∴ Length of each side of the equilateral triangle = 30 cm ÷ 3 = 10 cm

(c) Length of string = 30 cm

Number of equal sides in regular hexagon = 6

∴ Length of each side of the regular hexagon = 30 cm ÷ 6 = 5 cm

12. Two sides of a triangle are 12 cm and 14 cm. The perimeter of the triangle is 36 cm. What is its third side?

Ans. The perimeter of the triangle = 36 cm.

The length of two of its sides are 12 cm and 14 cm.

Length of the third side of the triangle = 36 – (12 + 14) cm

= (36 – 26) cm = 10 cm

13. Find the cost of fencing a square park of side 250 m at the rate of 20 per meter.

Ans. Length of the side of a square = 250 m

∴ Perimeter of the square = 250 m × 4 = 1000 m

Rate of fencing = □20 per m.

∴ Cost of fencing = □20 × 1000 = □20,000

14. Find the cost of fencing a rectangular park of length 175 m and breadth 125 m at the rate of □12 per meter.

Ans. Length of the rectangular park = 175 m

Breadth of the rectangular park = 125 m

∴ Perimeter of the park = 2 [length + breadth]

= 2[175 m + 125 m]

= 2 × 300 m = 600 m

Rate of fencing = □ 12 per metre Cost of fencing = □12 × 600 = □7200

15. Sweety runs around a square park of side 75 m.

Bulbul runs around a rectangular park with a length of 60 m and breadth of 45 m.

Who covers less distance?

Ans. Side of the square park = 75 m

∴ its perimeter = 4 × 75 m = 300 m

Perimeter of the rectangular park = 2 [length + breadth]

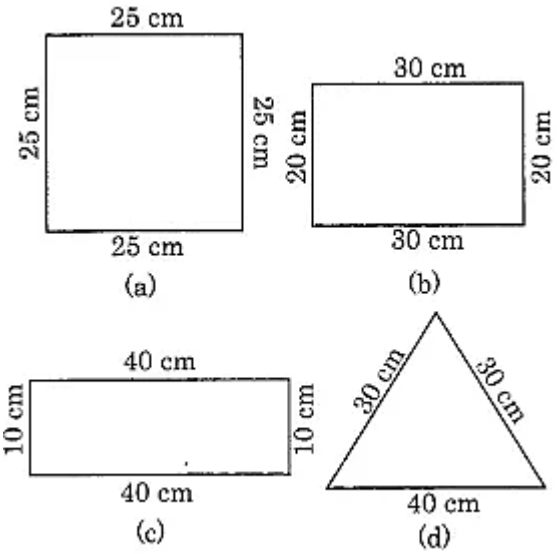
= 2 [60 m + 45 m]

= 2 × 105 m = 210 m.

Since 210 m < 300 m.

So, Bulbul covers less distance.

16. What is the perimeter of each of the following figures? What do you infer from the answers?



Ans. (a) Perimeter of the square = 25 cm + 25 cm + 25 cm + 25 cm = 4 x 25 cm = 100 cm

(b) Perimeter of the rectangle = 30 cm + 20 cm + 30 cm + 20 cm – 2 [30 cm + 20 cm] = 2 × 50 cm = 100 cm

(c) Perimeter of the rectangle = 40 cm + 10 cm + 40 cm + 10 cm = 2 [40 cm + 10 cm] = 2 × 50 cm = 100 cm

(d) Perimeter of the triangle = Sum of all sides = 30 cm + 30 cm + 40 cm = 100 cm From the above answers, we conclude that different figures may have equal perimeters.

17. Avneet buys 9 square paving slabs, each with a side of $\frac{1}{7}$ m. He lays them in the form of a square.

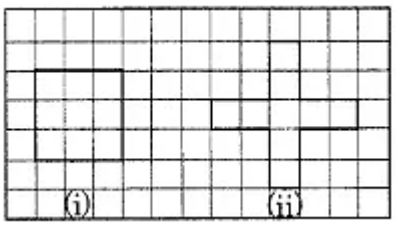
(a) What is the perimeter of his arrangement [Fig. (i)]?

(b) Shari does not like his arrangement. She gets him to lay them out like a cross.

What is the perimeter of her arrangement [Fig. (ii)]?

(c) Which has a greater perimeter?

(d) Avneet wonders, if there is a way of getting an even greater perimeter. Can you find a way of doing this? (The paving slabs must meet along complete edges, i.e., they can not be broken).



Ans. (a) The arrangement is in the form of a square of side

$$\left(\frac{1}{2}\text{m}+\frac{1}{2}\text{m}+\frac{1}{2}\text{m}\right)=1\frac{1}{2}\text{m}.$$

∴ the perimeter of the square arrangement

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

$$=4\times1\frac{1}{2}\text{m}$$

$$=4\times\frac{3}{2}\text{m}=6\text{m}.$$

(b) Perimeter of cross-arrangement

$$=\frac{1}{2}\text{m}+1\text{m}+1\text{m}+\frac{1}{2}\text{m}+1\text{m}+1\text{m}+\frac{1}{2}\text{m}+1\text{m}+1\text{m}+\frac{1}{2}\text{m}+1\text{m}+1\text{m}=10\text{m}$$

(c) Since 10 m > 6 m

∴ Cross-arrangement has a greater perimeter.

(d) Total number of tiles = 9

∴ We have the following arrangement

The above arrangement will also have a greater perimeter.