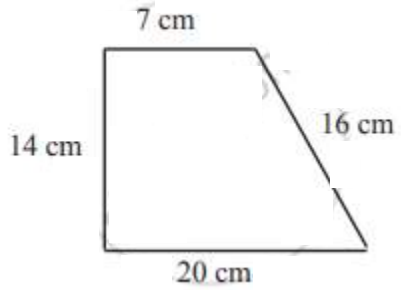
Chapter 12: Perimeter and Area

PROBLEM SET 48 [PAGES 68 - 69]

Problem Set 48 | Q 1.1 | Page 68

Write the perimeter of the figure given below.



SOLUTION

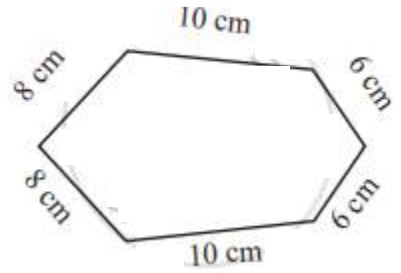
Perimeter $\square ABCD$ = 20 + 16 + 7 + 14

= 57 cm

∴ 57 cm.

Problem Set 48 | Q 1.2 | Page 68

Write the perimeter of the figure given below.



SOLUTION

Perimeter of the figure

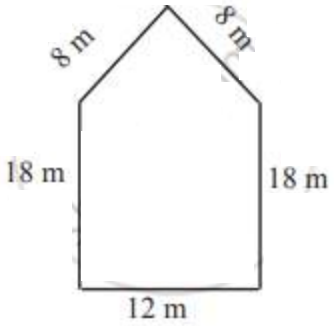
= 10 + 6 + 6 + 10 + 8 + 8

= 48 cm

∴ 48 cm.

Problem Set 48 | Q 1.3 | Page 68

Write the perimeter of the figure given below it.



SOLUTION

Perimeter of the figure

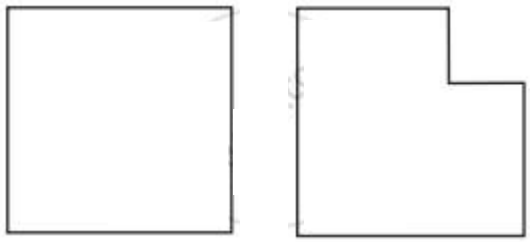
= 12 + 18 + 8 + 8 + 18

= 64 m

∴ 64 m.

Problem Set 48 | Q 2 | Page 69

If a square of side 1 cm is cut out of the corner of a larger square with side 3 cm (see the figure), what will be the perimeter of the remaining shape?



SOLUTION

Perimeter = 2 + 3 + 3 + 2 + 1 + 1

= 12 cm

∴ 12 cm.

PROBLEM SET 49 [PAGES 70 - 71]

Problem Set 49 | Q 1 | Page 70

How much wire will be needed to make a rectangle 7 cm long and 4 cm wide?

SOLUTION

Perimeter of a rectangle

= 2 x length + 2 x breadth

= 2 x 7 + 2 x 4

= 14 + 8

= 22 cm

∴ 22 cm wire will be needed to make a rectangle.

Problem Set 49 | Q 2 | Page 70
If the length of a rectangle is 20 m and its width is 12 m, what is its perimeter?

SOLUTION

Perimeter of a rectangle

= 2 x length + 2 x breadth

= 2 x 20 + 2 x 12

= 40 + 24

= 64 m

∴ Perimeter is 64 m.

Problem Set 49 | Q 3 | Page 70
Each side of a square is 9 m long. Find its perimeter.

SOLUTION

The perimeter of a square

= 4 x length of one side

= 4 x 9

= 36 m

∴ The perimeter is 36 m.

Problem Set 49 | Q 4 | Page 70
If we take 4 rounds around a field that is 160 m long and 90 m wide, what is the distance we walk in kilometers?

SOLUTION

Perimeter of a rectangular field

= 2 x length + 2 x breadth

= 2 x 160 + 2 x 90

= 320 + 180

= 500 m

In one round distance walked is 500 m, hence, distance walked in 4 rounds.

= 500 x 4 = 2000 m

= 2 km

∴ The distance walked in 4 rounds is 2 km.

Problem Set 49 | Q 5 | Page 70

Sanju completes 12 rounds around a square park every day. If one side of the park is 120 m, find out in kilometres and metres the distance that Sanju covers daily.

SOLUTION

The perimeter of a square

= 4 x length of one side

= 4 x 120

= 480 m

So, in one round the distance can be covered is 480 m, hence in 12 rounds the distance can be covered is,

= 480 x 12 = 5760 m

= 5000 m + 760 m

∴ Sanju covers 5 km of 760 m daily.

Problem Set 49 | Q 6 | Page 70

The length of a rectangular plot of land is 50 m and its width is 30 m. A triple fence has to be put along its edges. If the wire costs 60 rupees per metre, what will be the total cost of the wire needed for the fence?

SOLUTION

Perimeter of a rectangular plot

= 2 x length + 2 x breadth

= 2 x 50 + 2 x 30

= 100 + 60

= 160 m

For a triple fence, wire needed

= 3 x 160

= 480 m

Cost of the wire needed

= wire needed x rate

= 480 x 60

= 28800 rupees

∴ The total cost of the wire needed for the fence is ₹ 28,800.

Problem Set 49 | Q 7 | Page 70

A game requires its players to run around a square playground. Each side of the playground is 20 m long. One player took 5 rounds around the playground. How many metres did he run altogether?

SOLUTION

The perimeter of a square

= 4 x length of one side

= 4 x 20

= 80 m

In one round 80 m.

So in 5 round = 80 x 5 = 400

= 400 m

∴ He runs altogether = 400 m.

Problem Set 49 | Q 8 | Page 70

Four rounds of wire fence have to be put around a field. If the field is 60 m long and 40 m wide, how much wire will be needed?

SOLUTION

Perimeter of rectangular field

= 2 x length + 2 x breadth

= 2 x 60 + 2 x 40

= 120 + 80

= 200 m

Hence, wire required for 4 rounds.

= 200 x 4 = 800 m

∴ Wire required for 4 rounds = 800 m.

Problem Set 49 | Q 9 | Page 70

The sides of a triangle are 24.7cm, 20.4 cm, and 10.5 cm respectively. What is the perimeter of the triangle?

SOLUTION

Perimeter of triangle

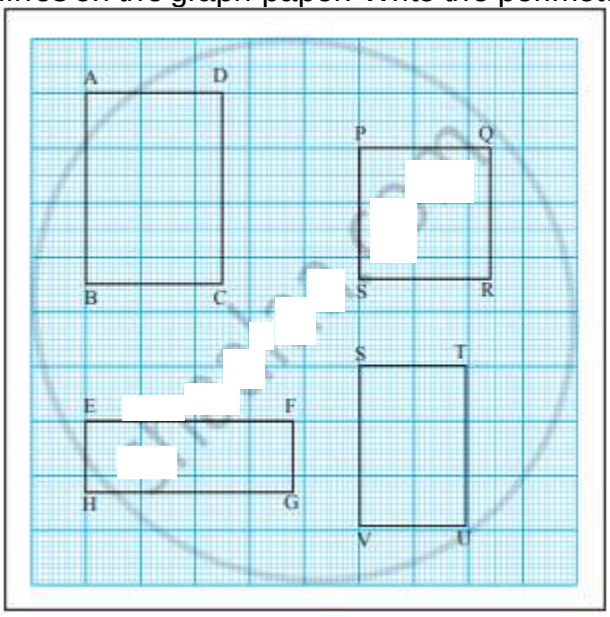
= 24.7 + 20.4 + 10.5

= 55.6

∴ The perimeter of a triangle = 55.6 cm.

Problem Set 49 | Q 10 | Page 71

Look at the figures on the sheet of graph paper. Measure their sides with the help of the lines on the graph paper. Write the perimeter of each in the right box.



1. Perimeter of rectangle ABCD = _____ cm.
2. Perimeter of rectangle EFGH = _____ cm.
3. Perimeter of square PQRS = _____ cm.
4. Perimeter of rectangle STUV = _____ cm.

SOLUTION

1. Perimeter of a rectangle ABCD
   = 2 x length + 2 x breadth
   = 2 x 3.5 + 2 x 2.5

= 7 + 5
= 12 cm
∴ 12 cm.

2. Perimeter of a rectangle EFGH
   = 2 x length + 2 x breadth
   = 2 x 3.8 + 2 x 1.3
   = 7.6 + 2.6
   = 10.2 cm
   ∴ 10.2 cm.

3. The perimeter of a rectangle PQRS
   = 2 x length+ 2 x breadth
   = 2 x 2.4 + 2 x 2.4
   = 4.8 + 4.8
   = 9.6 cm
   ∴ 9.6 cm.

4. The perimeter of a rectangle STUV
   = 2 x length+ 2 x breadth
   = 2 x 3 + 2 x 2
   = 6 + 4
   = 10 cm
   ∴ 10 cm.

PROBLEM SET 50 [PAGE 74]

Problem Set 50 | Q 1.1 | Page 74

The length of the side of the square is given below. Find its area.
12 metre

SOLUTION

Area of a square = side x side

= 12 x 12

= 144 sq.m.

Problem Set 50 | Q 1.2 | Page 74

The length of the side of the square is given below. Find its area.
6 cm

SOLUTION

Area of a square = side x side

= 6 x 6

= 36 sq.cm.

Problem Set 50 | Q 1.3 | Page 74

The length of the side of the square is given below. Find its area.

25 metres

SOLUTION

Area of a square = side x side

= 25 x 25

= 625 sq.m.

Problem Set 50 | Q 1.4 | Page 74

The length of the side of the square is given below. Find its area.

18 cm

SOLUTION

Area of a square = side x side

= 18 x 18

= 324 sq.cm.

Problem Set 50 | Q 2 | Page 74

If the cost of 1 sq m of a plot of land is 900 rupees, find the total cost of a plot of land that is 25 m long and 20 m broad.

SOLUTION

Area of the rectangular plot

= length x breadth

= 25 x 20

= 500 sq.m.

Cost of the plot of land

= Area of the plot x rate

= 500 x 900

= 4,50,000 rupees

Problem Set 50 | Q 3 | Page 74

The side of a square is 4 cm. The length of a rectangle is 8 cm and its width is 2 cm. Find the perimeter and area of both figures.

SOLUTION

Perimeter of a square = 4 x side

= 4 x 4

= 16 cm

Area of a square = side x side

= 4 x 4

= 16 sq.cm.

Perimeter of a rectangle

= 2 x length + 2 x breadth

= 2 x 8 + 2 x 2

= 16 + 4

= 20 cm

Area of a rectangle= length x breadth

= 8 x 2

= 16 sq.cm.

Problem Set 50 | Q 4 | Page 74

What will be the labour cost of laying the floor of an assembly hall that is 16 m long and 12 m wide if the cost of laying 1 sq m is 80 rupees?

SOLUTION

Area of rectangular floor

= length x breadth

= 16 x 12

= 192 sq.cm.

The cost of laying 1 sq.m. is 80 rupees.

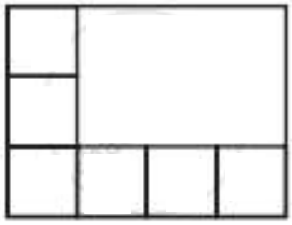
Hence, the cost of laying 192 sq.m.

= 192 x 80 = 15,360 rupees.

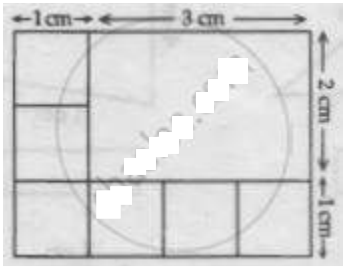
∴ ₹ 15,360.

Problem Set 50 | Q 5 | Page 74

The picture alongside shows some squares. Find out how many squares with the same measures will fit in the empty space in the figure.



SOLUTION



length of the empty space = 4 - 1 = 3 cm

breadth of the empty space = 3 - 1 = 2 cm

square in empty space = length x breadth

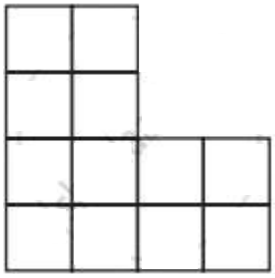
= 3 x 2

= 6 sq.cm.

∴ 6 squares will fit in the empty space in the figure.

Problem Set 50 | Q 6 | Page 74

Divide the figure given alongside four parts in such a way that the area and shape of each part are the same. Colour the parts in different colours.



SOLUTION