Q.1Find the areas of the rectangles whose sides are :

(a) 3 cm and 4 cm

(b) 12 m and 21 m

(c) 2 km and 3 km

(d) 2 m and 70 cm

SOLUTION:

(a) Area of rectangle = length × breadth

= 3 cm × 4 cm = 12 cm2

(b) Area of rectangle = length × breadth

= 12 m × 21 m = 252 m2

(c) Area of rectangle = length × breadth

= 2 km × 3 km = 6 km2

(d) Area of rectangle = length × breadth

= 2 m × 70 cm = 2 m × 0.7 m = 1.4 m2

Q.2.Find the areas of the squares whose sides are:

(a) 10 cm

(b) 14 cm

(c) 5 m

SOLUTION:

(a) Area of square = side × side

= 10 cm × 10 cm = 100 cm2

(b) Area of square = side × side

= 14 cm × 14 cm = 196 cm2

(c) Area of square = side × side

= 5 m × 5 m = 25 m2

Q3.The length and breadth of three rectangles are as given below :

(a) 9 m and 6 m

(b) 17 m and 3 m

(c) 4 m and 14 m

Which one has the largest area and which one has the smallest?

SOLUTION:

(a) Area of rectangle = length × breadth

= 9 m × 6 m = 54 m2

(b) Area of rectangle = length × breadth

= 17 m × 3 m = 51 m2

(c) Area of rectangle = length × breadth

= 4 m × 14 m = 56 m2

Thus, rectangle (C) has the largest area, i.e. 56 m2 and rectangle (B) has the smallest area, i.e., 51 m2.

Q4.The area of a rectangular garden 50 m long is 300 sq m. Find the width of the garden.
SOLUTION:

Length of rectangle = 50 m

Area of rectangle = 300 m2

Breadth=area of rectangle/ length

= (300/50) m = 6m

Thus, the breadth of the garden is 6 m.

Q5.What is the cost of tiling a rectangular plot of land 500 m long and 200 m wide at the rate of Rs 8 per hundred sq. m?

SOLUTION:

Length of land = 500 m

breadth of land = 200 m

Area of land = length × breadth

= 500 m × 200 m = 1,00,000 sq. m

Cost of tiling 100 sq. m of land = Rs 8

∴ Cost of tiling 1,00,000 sq. m of land

=Rs.8x1,00,000 / 100

=Rs.8,000

Q6.A table-top measures 2 m by 1 m 50 cm. What is its area in square metres?

SOLUTION:

Length of table-top = 2 m

Breadth of table-top = 1 m 50 cm = 1.50 m

∴ Area of table-top = length × breadth

= 2 m × 1.50 m = 3 m2

Q7.A room is 4 m long and 3 m 50 cm wide. How many square metres of carpet is needed to cover the floor of the room?

SOLUTION:

Length of room = 4 m

And breadth of room = 3 m 50 cm = 3.50 m

∴ Area of carpet = length × breadth

= 4 m × 3.50 m = 14 m2

Q8.A floor is 5 m long and 4 m wide. A square carpet of sides 3 m is laid on the floor. Find the area of the floor that is not carpeted.

SOLUTION:

Length of floor = 5 m

and breadth of floor = 4 m

Area of floor = length × breadth = 5 m × 4 m = 20 m2

Now, side of square carpet = 3 m

Area of square carpet = side × side = 3 m × 3 m = 9 m2

∴ Area of floor that is not carpeted

= 20 m2 - 9 m2 = 11 m2

Q9.Five square flower beds each of sides 1 m are dug on a piece of land 5 m long and 4 m wide. What is the area of the remaining part of the land?

SOLUTION:

Side of square flower bed = 1 m

Area of square flower bed = side × side

= 1 m × 1 m = 1 m2

∴ Area of 5 square flower beds = (1 × 5) m2 = 5 m2

Now, length of land = 5 m

And breadth of land = 4 m

Area of land = length × breadth = 5 m × 4 m = 20 m2

∴ Area of remaining part

= Area of land - Area of 5 flower beds
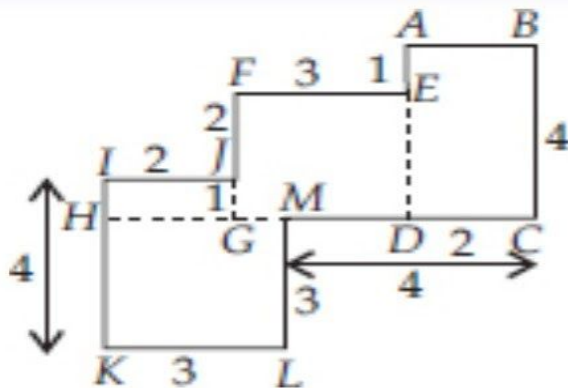
= 20 m2 - 5 m2 = 15 m2

Q10.By splitting the following figures into rectangles, find their areas (The measures are given in centimetres).
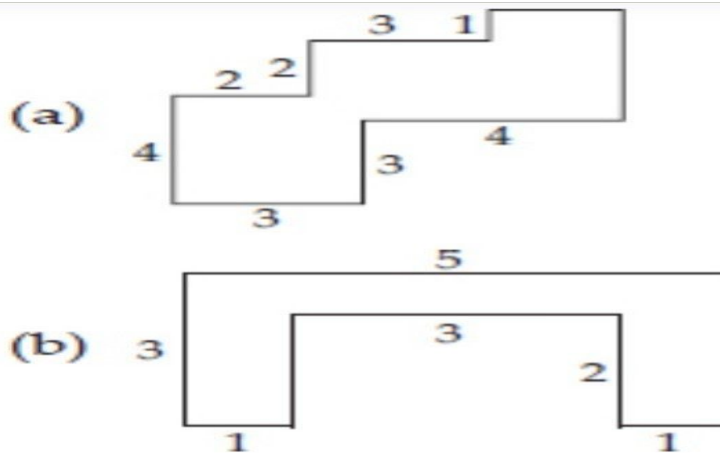
SOLUTION:

(a) We have,

Area of square HKLM = (3 × 3) cm2 = 9 cm2

Area of rectangle IJGH = (1 × 2) cm2 = 2 cm2

Area of square FEDG = (3 × 3) cm2 = 9 cm2

Area of rectangle ABCD = (2 × 4) cm2 = 8 cm2

∴ Total area of the figure

= (9 + 2 + 9 + 8) cm2 = 28 cm2

(b) We have,
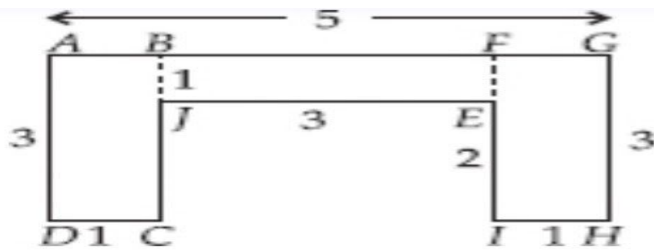
Area of rectangle ABCD = (3 × 1) cm2 = 3 cm2
Area of rectangle BJEF = (3 × 1) cm2 = 3 cm2
Area of rectangle FGHI = (3 × 1) cm2 = 3 cm2
∴ Total area of the figure = (3 + 3 + 3) cm2 = 9 cm2
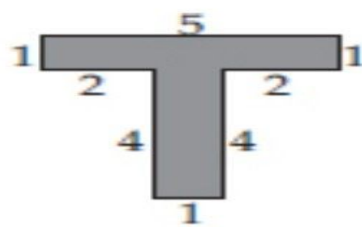
Q11.Split the following shapes into rectangles and find their areas. (The measures are given in centimetres).
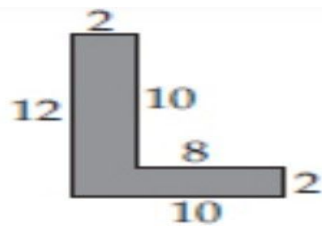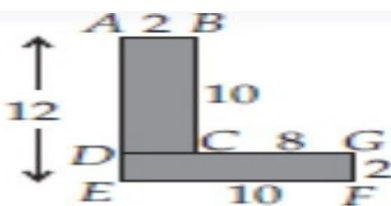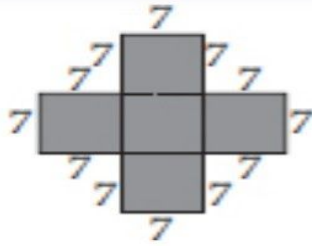

(a)
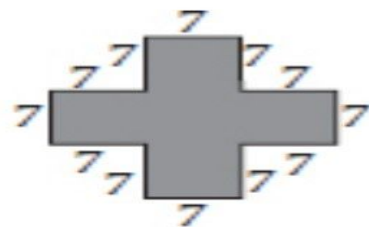
(b)

(c)

SOLUTION:
(a) We have,

Area of rectangle ABCD = (2 × 10) cm2 = 20 cm2

Area of rectangle DEFG = (10 × 2) cm2 = 20 cm2

∴ Total area of the figure = (20 + 20) cm2 = 40 cm2

(b) We have,

There are 5 squares each of side 7 cm.

Area of one square = (7 × 7) cm2 = 49 cm2

∴ Area of 5 squares = (5 × 49) cm2 = 245 cm2

(c) We have,
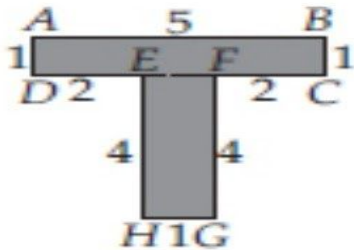
Area of rectangle ABCD = (5 × 1) cm2 = 5 cm2

Area of rectangle EFGH = (4 × 1) cm2 = 4 cm2

∴ Total area of the figure = (5 + 4) cm2 = 9 cm2

Q12.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:

(a) 100 cm and 144 cm

(b) 70 cm and 36 cm.

SOLUTION:

(a) Area of rectangular region

= length × breadth = 100 cm × 144 cm = 14400 cm2

Area of one tile = 12 cm × 5 cm = 60 cm2

∴ Number of tiles = area of rectangular region/ area of one tile

=14,400/60

=240

Thus, 240 tiles are required.

(b) Area of rectangular region

= length × breadth = 70 cm × 36 cm = 2520 cm2

Area of one tile = 12 cm × 5 cm = 60 cm2

∴ Number of tiles = area of rectangular region/area of one tile

= 2,520/60

=42

Thus, 42 tiles are required.