PAGE: 146

**Whose Slice is Bigger?**

Parth and Gini bought aam pappad (dried mango slice) from a shop. Their pieces looked like these.
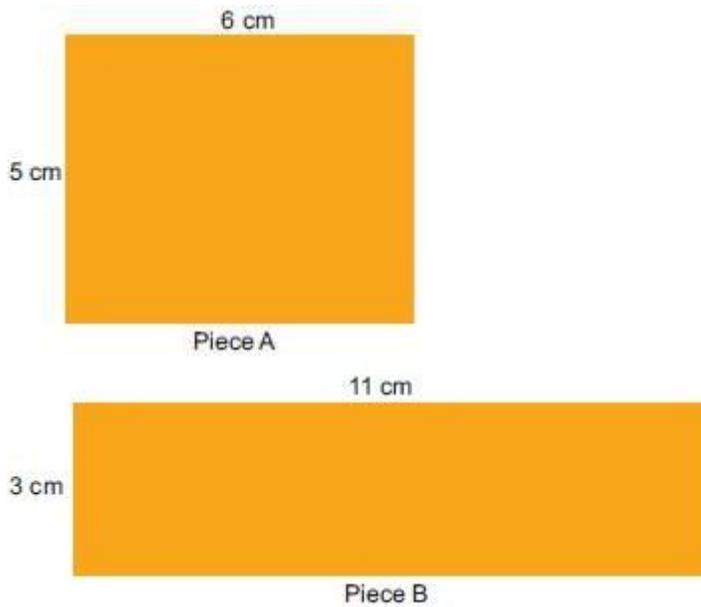
Both could not make out whose piece was bigger.

1. Suggest some ways to find out whose piece is bigger. Discuss.
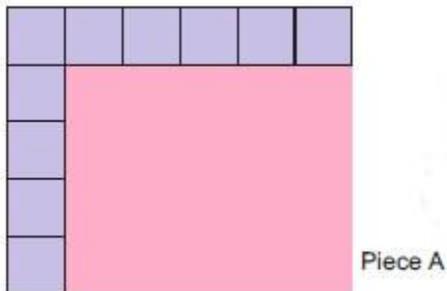

Solution:

The length of piece A is 6 cm.

So 6 squares of side 1 cm can be arranged along its length.

The width of piece A is 5 cm.

So 5 squares can be arranged along its width.
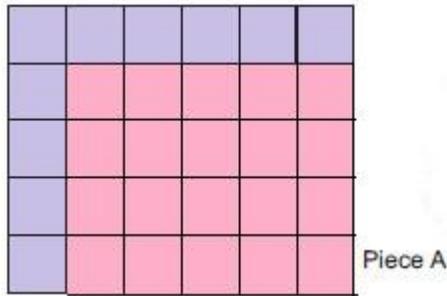
Piece A

Altogether 30 squares can be arranged on it.

So, the area of piece A = 6 cm × 5 cm = 30 square cm

2. Altogether how many squares can be arranged on it? _____
   Solution:

30

3. So the area of piece A = _____ square cm

So the area of piece A = 30 square cm

4. In the same way find the area of piece B. Solution:

Now, the area of piece B = 11 cm × 3 cm = 33 square cm

5. Who had the bigger piece? How much bigger? Solution:

So, the area of piece B is bigger than the area of piece A. Difference
in area of piece A and piece B = 33 – 30 = 3 square cm So, piece B is
3 square cm bigger than piece A.

Cover with stamps:

**This stamp has an area of 4 square cm. Guess how many such stamps will cover this
big rectangle.**

Solution:

Check your guess:
a) **Measure the yellow rectangle. It is _____ cm long.**
Solution:
14cm

b) **How many stamps can be placed along its length? _____ Solution:**
7 stamps

c) **How wide is the rectangle? _____ cm Solution:**
8cm

d) **How many stamps can be placed along its width? _____**
Solution:
4 stamps

e) How many stamps are needed to cover the rectangle? _____ Solution:
28 stamps

f) How close was your earlier guess? Discuss.
Solution:
It was pretty close.

g)What is the area of the rectangle? _____ Square cm Solution:
Area of rectangle = 7 × 4 = 28 square cm

h)What is the perimeter of the rectangle? _____ cm Solution:
Length of the rectangle = 14 cm
Breadth of the rectangle = 8 cm
A rectangle has 2 lengths and 2 breadths.
So, perimeter of the rectangle = Sum of all its sides = Length of its boundary = 14 cm + 8 cm + 14 cm + 8 cm = 44 cm
The perimeter of rectangle is 44 cm.

Practice time:
a) Arbaz plans to tile his kitchen floor with green square tiles. Each side of the tile is 10 cm. His kitchen is 220 cm in length and 180 cm wide. How many tiles will he need?

Solution:
Given length of kitchen = 220 cm
Width of the kitchen = 180 cm
Each side of tile = 10 cm
Area of floor = length × width
= 220 × 180 = 39600 square cm
Area of a tile = side × side
= 10 × 10 = 100 square cm

Number of tiles = area of floor/ area of a tile
= 39600/100
= 396 tile.

b)   The fencing of a square garden is 20 m in length. How long is one side of the garden?
Solution:
Given perimeter of garden = 20 m which has to be fenced.
Length of one side = perimeter/4
= 20/5 = 5m.

c)   A thin wire 20 centimeters long is formed into a rectangle. If the width of this rectangle is 4 centimeters, what is its length?

Solution:
Given perimeter of a rectangle = 20 cm
Width of a rectangle = 4 cm
We know that Perimeter of rectangle = 2 (length + breadth)
20 = 2 length + 2 breadth 2
length = 20 – 2 breadth
2 length = 20 – 2 × 4
2 length = 20 – 8
Length = 12/2
= 6 cm

**d) A square carom board has a perimeter of 320 cm. How much is its area?**

Solution:
Given perimeter of carom board is 320 cm
We know that perimeter of square = 4 × side
Side = perimeter/4
Side = 320/4
= 80 cm
We know that area of square = side × side
= 80 × 80
= 6400 square cm

**e) How many tiles like the triangle given here will fit in the white design? Area of
design = _____ square cm**
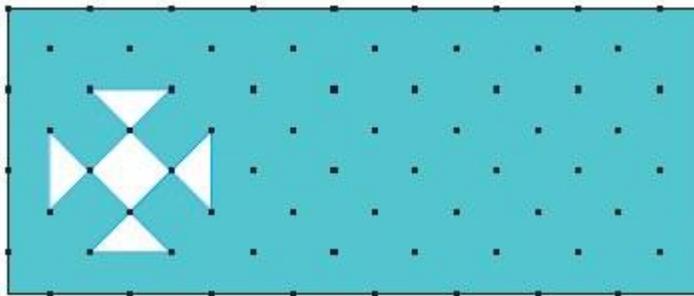
□ This triangle
is half of the
cm square

Solution:
6 triangular tiles will fit in to the given white design.
Now, area of 1 such triangular tile = 12 square cm

Area of 6 triangular tiles that make this design = 6 × 12 = 3 square cm
Area of design = 3 square cm
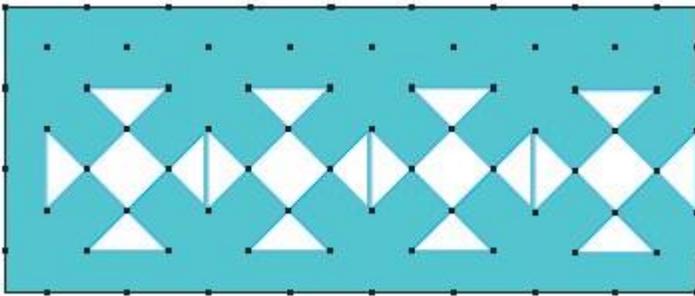
f) Sanya, Aarushi, Manav and Kabir made greeting cards. Complete the table for their cards:

Whose card	Length	Width	Perimeter	Area
Sanya	10 cm	8 cm		
Manav	11 cm		44 cm	
Aarushi		8cm		80 square cm
Kabir			40 cm	100 square cm

Solution:
Perimeter of Sanya's card = Sum of all its sides = 10 + 8 + 10 + 8 = 36 cm
Length of Manav's card = 11 cm
Perimeter of his card = 44 cm
We have to find the width of Manav's card.
Perimeter of card = Sum of all its sides = 11 + 11 + sum of 2 other sides = 22 + sum of 2 other sides
Now, sum of two other sides = 44 − 22 = 22 cm The
two other sides of the greeting cards are width.
So, width of Manav's card = 22 ÷ 2 = 11 cm
Width of Aarushi's card = 8 cm
Area of the card = 80 square cm
Now, we have to find length of the card.
Area of card = Length of card × 8 cm = 80 square cm
So, on dividing the area of card by its width, we can get its length. Therefore,
length of Aarushi's card = 80 ÷ 8 = 10 cm

Whose card	Length	Width	Perimeter	Area
Sanya	10 cm	8 cm	36 cm	80 square cm
Manav	11 cm	11 cm	44 cm	121 square cm
Aarushi	10 cm	8cm	36 cm	80 square cm
Kabir	10 cm	10 cm	40 cm	100 square cm

My belt is longest:

Take a thick paper sheet of length 14 cm and width 9 cm. You can also use an old postcard.

1.   What is its area? What is its perimeter? Solution:

Length of paper sheet   = 14 cm

Breadth of paper sheet = 9 cm

Area of the sheet = 14 cm × 9 cm = 126 square cm

Perimeter of the sheet   = 14 cm + 9 cm + 14 cm + 9 cm = 46 cm

2.   Now cut strips of equal sizes out of it. Using tape join the strips, end to end, to make a belt.

How long is your belt? _____ Solution:

84 cm

3. What is its perimeter _____?

Solution:

90 cm

4. Whose belt is the longest in the class? _____ Solution:

Strips of the least width will make the longest belt in the class.

Discuss:

1. Why did some of your friends get longer belts than others?
   Solution:

Because they made belts from thinner strips than others.

2. Is the area of your belt the same as the area of the postcard? Why or why not?

Solution:

Area of the belt of 3 cm wide strip = length × breadth

= 3 × 42 = 126 square cm

Yes, the area of my belt is same as the area of post card. Because every area of post card used for making belt.

3. What will you do to get a longer belt next time? Solution:

By making thinner belts I can get the longer belt.

Share the land:

Nasreena is a farmer who wants to divide her land equally among her three children — Chumki, Jhumri and Imran. She wants to divide the land so that each piece of land has one tree. Her land looks like this.
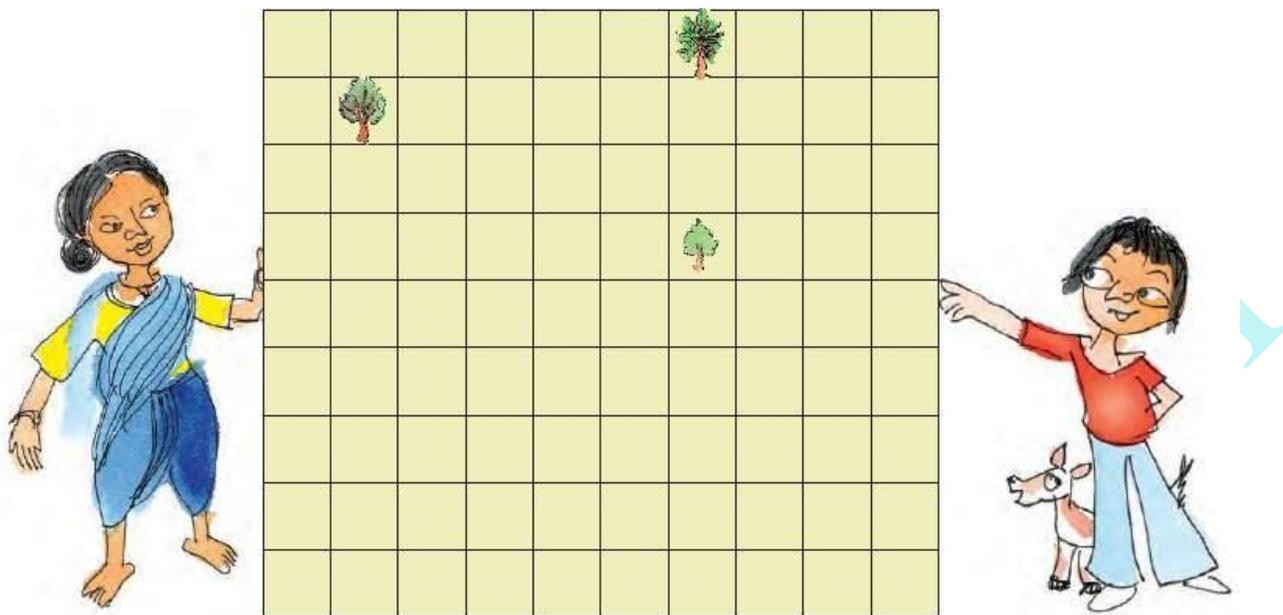
1. Can you divide the land equally? Show how you will divide it. Remember each person has to get a tree. Colour each person's piece of land differently Solution:

Total number of boxes = 90 Hence

one person share is = 90/3 = 30

boxes.

The division can be done as shown in the given figure:
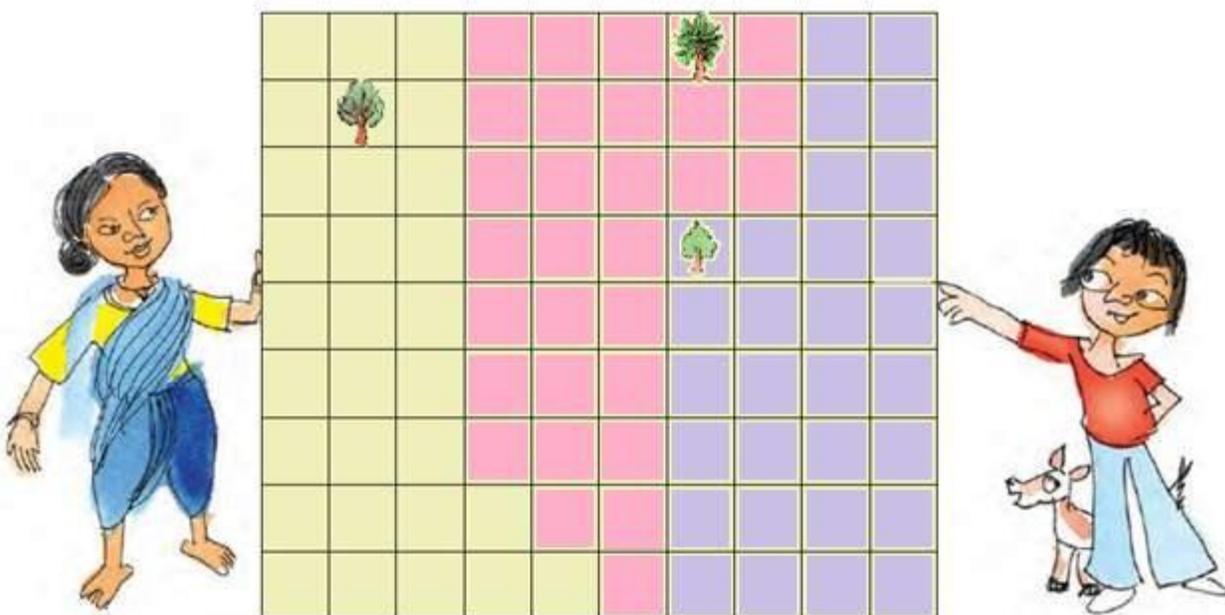
2. If each square on this page is equal to 1 square metre of land, how much land will each of her children get? _____ Square m Solution:

30 square meter.

3. Chumki, Jhumri and Imran need wire to make a fence.
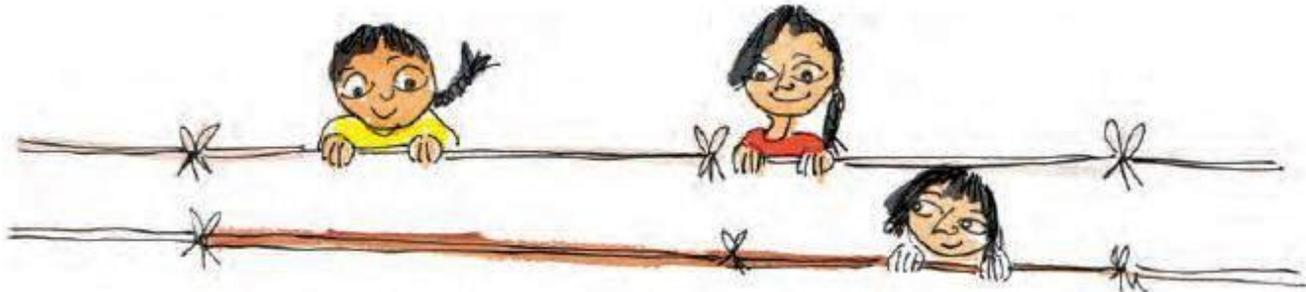
Who will need the longest wire for fencing? _____ Solution:
Perimeter of Chumki's land = 9 + 2 + 3 + 2 + 6 + 4 = 26 m
Perimeter of Jhumri's land = 6 + 3 + 2 + 3 + 4 + 6 = 24 m
Perimeter of Imraan's land = 8 + 5 + 3 + 2 + 5 + 3 = 26 m
So it is clear that Chumki and Imraan need longest wire of fencing.

4. How much wire in all will the three need? _____ Solution:
Total length of wire = 26 m + 24 m + 26 m = 76 m.

Practice time:
A. Look at the table. If you were to write the area of each of these which column would you choose? Make a (✔)

	Square cm	Square metre	Square km
Handkerchief	✔		
Sari			
Page of your book			
School land			
Total land of a city			
Door of your classroom			
Chair seat			
Blackboard			
Indian flag			
Land over which a river flows			

Solution:

	Square cm	Square metre	Square km
Handkerchief	✔		
Sari		✔	
Page of your book	✔		
School land		✔	
Total land of a city			✔
Door of your classroom		✔	
Chair seat	✔		
Blackboard		✔	
Indian flag	✔		
Land over which a river flows			✔

B. Draw a square of 9 square cm. Write A on it. Draw another square with double the side. Write B on it Solution:
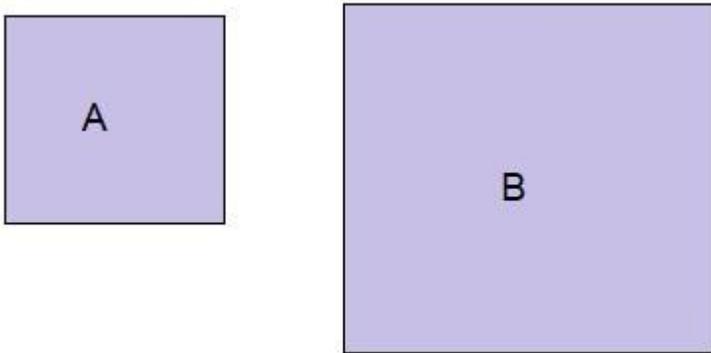
Answer these —

1. The perimeter of square A is _____ cm.
Solution:
12 cm

2. The side of square B is _____ cm.
Solution:
6 cm

3. The area of square B is _____ square cm.
Solution:
36 cm

4. The area of square B is _____ times the area of square A. Solution:
4 times

5. The perimeter of square B is _____ cm.
Solution:
24 cm

6. The perimeter of square B is _____ times the perimeter of square A. Solution:
2 times

Save the Birds:
There are two beautiful lakes near a village. People come for boating and picnics in both the lakes. The village Panchayat is worried that with the noise of the boats the

birds will stop coming. The Panchayat wants motor boats in only one lake. The other lake will be saved for the birds to make their nests.

1 cm on this drawing = 1 km on the ground
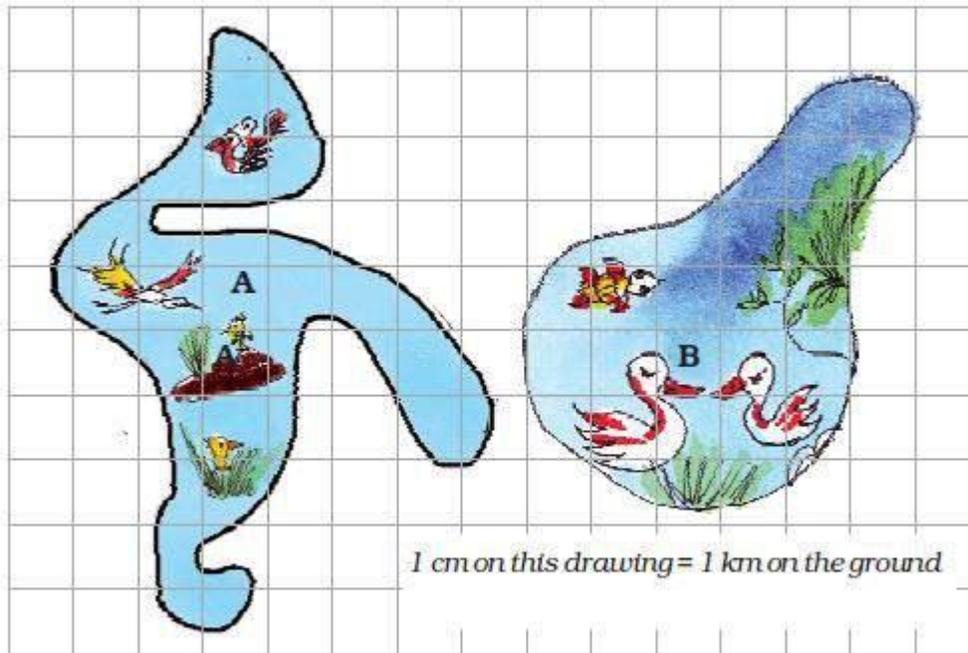
a) How many cm is the length of the boundary of Lake A in the drawing?
_____ (use thread to find out) Solution:
When we measure the boundary of Lake A with the help of thread, it comes out to be around 30 cm.

b) What is the length of the boundary of Lake B in the drawing?
Solution:
When we measure the boundary of Lake B with the help of thread, it comes out to be around 25 cm.

c) How many kilometers long is the actual boundary of Lake A?
Solution:
Here, the scale is 1 cm = 1 km
So, length of the actual boundary of lake A = 30 km

d) How many kilometers long is the actual boundary of Lake B?
Solution:
Here, the scale is 1 cm = 1 km
So, length of the actual boundary of lake B = 25 km

e) A longer boundary around the lake will help more birds to lay their eggs. So which lake should be kept for birds? Which lake should be used for boats?
Solution:
The boundary around the lake A is more than the boundary around the lake B. So, Lake A should be kept for birds and Lake B should be used for boats.

f) Find the area of Lake B on the drawing in square cm. What is its actual area in square km?
Solution:
Lake B has 15 fully filled squares and 11 half-filled or more than half – filled squares.
Area of 15 fully filled squares = 15 × 15 = 225 square cm
We consider the area of every single half – filled or more than half – filled square as 1 square cm
Thus, the area of 11 such squares = 11 × 11 = 121 square cm
So, total area of lake B = 225 + 121 = 346 square cm
We are given 1 cm on drawing = 1 km on ground
Therefore, 346 square cm on drawing = 346 km

King's Story:
The King was very happy with carpenters Cheggu and Anar. They had made a very big and beautiful bed for him. So as gifts the king wanted to give some land to Cheggu, and some gold to Anar. King's Story Cheggu was happy. He took 100 metres of wire and tried to make different rectangles. He made a 10 m × 40 m rectangle. Its area was 400 square metres. So he next made a 30 m × 20 m rectangle.
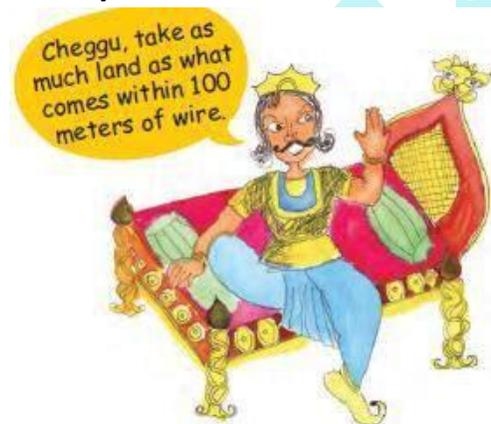
1.   What is its area? Is it more than the first rectangle? Solution:
Area of rectangle = 30 × 20 = 600 square m.
Yes, it is more than first rectangle.

2. **What other rectangles can he make with 100 metres of wire?**
**Discuss which of these rectangles will have the biggest area.**
Solution:
Following rectangles are possible:
5 × 45 = 225 square m
15 × 35 = 525 square m
25 × 25 = 625 square m
The square will have biggest area.

3. **Cheggu's wife asked him to make a circle with the wire. She knew it had an area**
of 800 square metres. Why did Cheggu not choose a rectangle? Explain.
Solution:
Because none of the rectangle will have area 0f 800 square meter.

4. **So Anar also tried many different ways to make a boundary for 800 square**
metres of land. He made rectangles A, B and C of different sizes. Find out the length of
the boundary of each. How much gold wire will he get for these rectangles?

A 40 m × 20 m

B 80 m × 10 m

C 800 m × 1 m

D
8000 m × 0.1 m
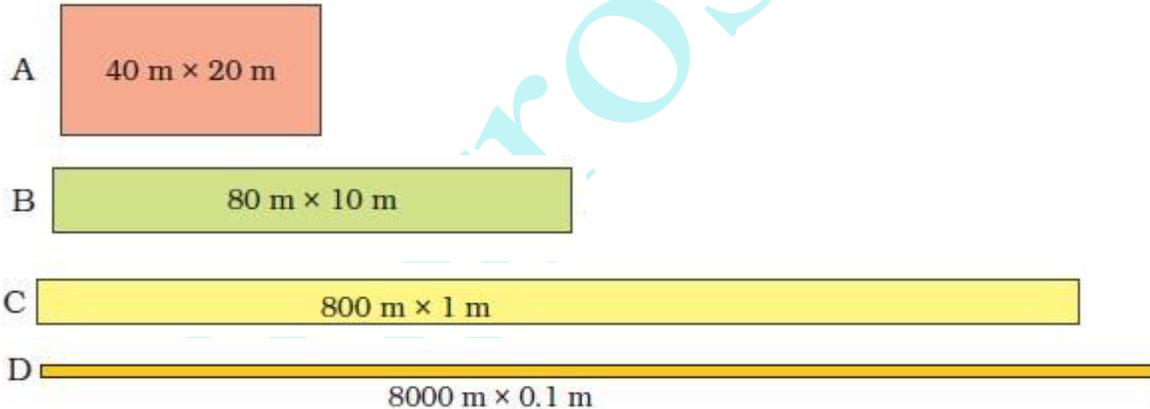
i. Gold wire for A = _____ metres Solution:
As the area of rectangle A is shown as 40 m × 20 m.
So, the length of rectangle = 40 m Width of rectangle = 20 m
Gold wire for A = 40 + 20 + 40 + 20 = 120 metres
ii. Gold wire for B = _____ metres Solution:
As the area of rectangle B is shown as 80 m ×10 m.
So, the length of rectangle = 80 m Width of rectangle = 10 m
Gold wire for B =   80 + 10 + 80 + 10 = 180 metres

iii. Gold wire for C = _____ metres
   Solution:
As the area of rectangle C is shown as 800 m × 1 m.
So, the length of rectangle = 800 m Width of rectangle = 1 m
Gold wire for C = 800 + 1 + 800 + 1 = 1602 metres

iv. So he will get _____ metres of gold
   wire!!
Solution:
As the area of rectangle D is shown as 8000 m × 0.1 m.
So, the length of rectangle = 8000 m
Width of rectangle = 0.1 m
Gold wire for C = 8000 + 0.1 + 8000 + 0.1 = 16000 + 0.2 = 16000.2 metres. So,
he will get 16000.2 metres of gold wire.