

CLASS - VI

Chapter - 12

परिमाप (पेग)

PERIMETER

अन्ते

AND

क्षेत्रफल

AREA

RUBI BALA

MATHS MISTRESS

G. G. S. S. School

ADARSH NAGAR

JALANDHAR

Ex 12.2

ਖੇਤਰफल

Area

1. ਖੁਰੇ ਵਰਗਾਂ ਨਾਲੋਂ 3 ਵੱਧ ਵਰਗਾਂ ਨਾਲੋਂ ਵੱਧੇ ਵਰਗਾਂ ਦੀ ਗਿਣਤੀ ਵਰਗੇ ਆਇਤੀਨਾਂ ਦਾ ਅਨੁਮਾਨਤ ਖੇਤਰफल ਪਤਾ ਕਰੋ।

Find the approximate area of each of the following figures by counting the number of squares: complete, more than half and exactly half.

Ans:  $\rightarrow$  ਸਮਤਲ ਚਿੱਤਰ ਦਾ ਖੇਤਰ =  $[m + n + \frac{1}{2} p]$

ਜਿੱਥੇ  $m$  = ਖੁਰੇ ਵਰਗਾਂ ਦੀ ਗਿਣਤੀ

$n$  = ਨਾਲੋਂ 3 ਵੱਧ ਵਰਗਾਂ ਦੀ ਗਿਣਤੀ

$p$  = ਬਿਲਕੁਲ ਨਾਲੋਂ ਵਰਗਾਂ ਦੀ ਗਿਣਤੀ

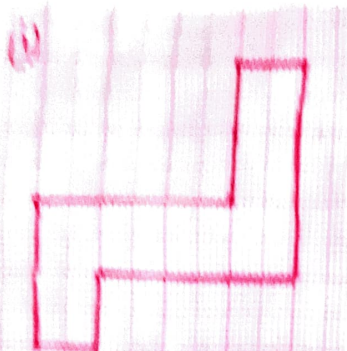
Area of the plane figures  $[m + n + \frac{1}{2}p]$

where  $m$  = Number of complete squares

$n$  = Number of squares more than half full

$p$  = Number of squares exactly half full

(i)



$$\text{Area} = [m + n + \frac{1}{2}p]$$

$$23225 = [7 + 0 + \frac{1}{2} \times 0]$$

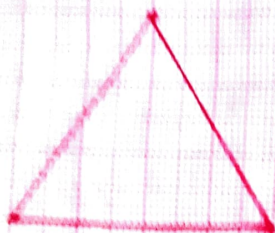
$$= 7 + 0 + 0$$

$$= 7 \text{ पिराहीना}$$

$$= 7 \text{ units}$$

(ii)

(ii)



$$\text{Area} = [m + n + \frac{1}{2}p]$$

$$23225 = [2 + 2 + \frac{1}{2} \times 4^2]$$

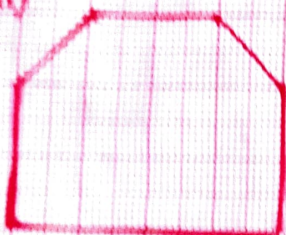
$$= 2 + 2 + 2$$

$$= 6 \text{ पिराहीना}$$

$$= 6 \text{ units}$$

(iii)

(iii)



$$\text{Area} = 10 + 0 + \frac{1}{2} \times 2$$

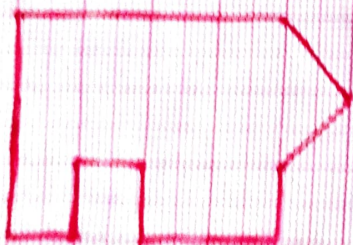
$$23225 = 10 + 0 + 1$$

$$= 11 \text{ पिराहीना}$$

$$= 11 \text{ units}$$

(iv)

(iv)



$$\text{Area} = [m + n + \frac{1}{2}p]$$

$$230 = 11 + 0 + \frac{1}{2} \times 2$$

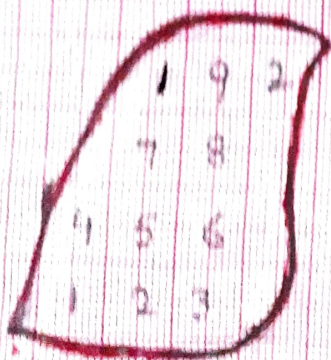
$$= 11 + 0 + 1$$

$$= 12 \text{ पिराहीना}$$

$$= 12 \text{ units}$$

(v)

(v)



$$\text{Area} = [m + n + \frac{1}{2}p]$$

$$230 = 9 + 2 + \frac{1}{2} \times 4^2$$

$$= 9 + 2 + 2$$

$$= 13 \text{ units / पिराहीना}$$



2. માપિત રા ચક્રવર્તુષ, યાકા રહે નિમણી :

Find the area of a rectangle whose :

(i) લંબાઈ = 12 સમ      રૂઢાઈ = 16 સમ

length = 12 cm      breadth = 16 cm

Ans: માપિત રા ચક્રવર્તુષ = લિ  $\times$  રૂઢ

Area of rectangle =  $l \times b$

$$= 12 \times 16$$

$$= 192 રૂઢા સમ / 192 \text{ cm}$$

(ii) લંબાઈ = 25 મીઠ      રૂઢાઈ = 18 મીઠ

length = 25 m      breadth = 18 m

Ans: ચક્રવર્તુષ = લિ  $\times$  રૂઢ

Area =  $l \times b$

$$= 25 \times 18$$

$$= 450 \text{ m}^2 / 450 \text{ sq. m}$$

(iii) લંબાઈ = 2.7 મીઠ      રૂઢાઈ = 45 સમ

length = 2.7 m      breadth = 45 cm

Ans: માપિત રા ચક્રવર્તુષ = લંબાઈ  $\times$  રૂઢાઈ

Area of rectangle =  $2.7 \text{ m} \times 45 \text{ cm}$

$$= 270 \text{ cm} \times 45 \text{ cm}$$

$$= 12150 \text{ cm}^2$$

(iv) લંબાઈ = 4.2 સમ      રૂઢાઈ = 1.5 સમ

length = 4.2 cm      breadth = 1.5 cm

Ans: ચક્રવર્તુષ =  $l \times b$

Area =  $4.2 \times 1.5$

$$= 6.3 \text{ cm}^2 / 6.3 \text{ sq. cm.}$$

Date \_\_\_\_\_  
Page \_\_\_\_\_

(v) લિંઘાઈ = 3.8 મિ.મી. રૂંઘાઈ = 4 મિ.મી.  
length = 3.8 mm breadth = 4 mm

$$\text{સતરવલ} = l \times b$$

$$\text{Area} = 3.8 \text{ mm} \times 4 \text{ mm}$$

$$= 15.2 \text{ mm}^2 / \text{sq. mm.}$$

3. દરગા રા સતરવલ યરા રૂં નિમરી ઝા:  
Find the area of the square with side:

(i) 19 મમ 19 cm

$$\text{દરગા રા સતરવલ} = \text{ઝા} \times \text{ઝા}$$

$$\text{Area of square} = \text{Side} \times \text{Side}$$

$$= 19 \text{ cm} \times 19 \text{ cm}$$

$$= 361 \text{ દરગા મમ}$$

$$= 361 \text{ sq. cm.}$$

(ii) 24 મિ.મી. 24 mm

$$\text{Area} = \text{Side} \times \text{Side}$$

$$\text{સતરવલ} = \text{ઝા} \times \text{ઝા}$$

$$= 24 \text{ mm} \times 24 \text{ mm}$$

$$= 576 \text{ દરગા મિ.મી.} / \text{sq. mm.}$$

(iii) 3.5 મમ 3.5 cm

$$\text{સતરવલ} = \text{ઝા} \times \text{ઝા}$$

$$\text{Side} = \text{Side} \times \text{Side}$$

$$= 3.5 \text{ cm} \times 3.5 \text{ cm}$$

$$= 12.25 \text{ દરગા મમ} / \text{sq. cm.}$$



(iv) 2.6 મમ 2.6 cm

$$\text{એકતરફલ} = (\text{કુર્સા})^2 = (\text{Side})^2$$

$$\text{Area} = (2.6)^2$$

$$= 2.6 \times 2.6 \text{ cm}$$

$$= 6.76 \text{ ચોરસ મમ / sq. cm}$$

(v) 8.2 મમ 8.2 cm

$$\text{એકતરફલ} = (\text{કુર્સા})^2$$

$$= (\text{Side})^2$$

$$= (8.2)^2$$

$$= 67.24 \text{ ચોરસ મમ / sq. cm}$$

4. દિવે આકૃતિ ના એકતરફલ 216 ચોરસ મમ છે અને દિમરી લંબાઈ 12 મમ છે. દિમરી કેટલી થકા રહે.

The area of a rectangle is 216 sq. cm and its length is 12 cm. Find its breadth.

Ans:

આકૃતિ ના એકતરફલ = લ x બ

$$\text{Area of rectangle} = l \times b$$

$$216 \text{ cm}^2 = 12 \text{ cm} \times b$$

$$b = \frac{216}{12}$$

$$\text{કેટલી} = 18 \text{ મમ}$$

$$\text{Breadth} = 18 \text{ cm}$$

5. ਇੱਕ ਆਇਤ ਦਾ ਖੇਤਰਫਲ 225 ਵਰਗ ਮੀਟਰ ਹੈ ਅਤੇ ਇਸਦੀ ਲੰਬਾਈ 9 ਮੀਟਰ ਹੈ। ਇਸਦੀ ਲੰਬਾਈ ਪਤਾ ਕਰੋ।

The area of a rectangle is 225 sq. m and its breadth is 9 m. Find its length.

Ans:

ਆਇਤ ਦਾ ਖੇਤਰਫਲ = 225 ਵਰਗ ਮੀਟਰ

Area of Rectangle = 225 Sq. m

$$l \times b = 225 \text{ m}^2$$

$$l \times 9 \text{ m} = 225 \text{ m}^2$$

$$l = \frac{225 \text{ m}^2}{9 \text{ m}}$$

$$\text{ਲੰਬਾਈ} / \text{length} = 25 \text{ m} / \text{ਮੀਟਰ}$$

6. ਇੱਕ ਮੈਦਾਨ ਦੀ ਲੰਬਾਈ ਅਤੇ ਲੰਬਾਈ ਦੂਰਤਾਵਾਂ 32 ਮੀਟਰ ਅਤੇ 24 ਮੀਟਰ ਹੈ, ਇਸ ਮੈਦਾਨ ਦੇ 300 ਪ੍ਰਤੀ ਵਰਗ ਮੀਟਰ ਦੀ ਦਰ ਨਾਲ ਸਮਤਲ ਪੱਧਰ ਕਰਨ ਦਾ ਖਰਚ ਪਤਾ ਕਰੋ।

The length and breadth of a ground are 32 m and 24 m. Find the cost of levelling the ground at the rate of Rs. 3 per sq. m.

Ans:

ਆਇਤ ਦਾ ਖੇਤਰਫਲ = 80 x 30

Area of rectangle =  $l \times b$

$$= 32 \text{ m} \times 24 \text{ m}$$

$$= 768 \text{ m}^2$$



1. ਫਰਸ਼ ਮੀਂਹ ਦੇ ਖਰਚੇ ਨਾਲ ਦਾ ਖਰਚਾ = 324

Cost of levelling 1 sq m = Rs 3

$$\text{ਕੁੱਲ ਖਰਚਾ} = 768 \text{ m}^2 \times \text{Rs } 3/\text{m}^2$$

$$\text{Total Cost} = \text{Rs } 2304$$

7. ਇੱਕ ਘੋੜੇ ਦੇ ਖਰੀਦਾਰ ਖਰੀਦੇ ਹੋਏ ਜ਼ਿਰਾਫ਼ੇ  
ਖਰੀਦੇ 324 ਫਰਸ਼ ਮੀਟਰ ਦੇ ਇੱਕ ਘੋੜੇ  
ਦੇ 36 ਮੀਟਰ ਦੇ।

Find the perimeter of a rectangle whose  
area is 324 sq. cm and its one side is  
36 cm.

Ans: ਘੋੜੇ ਦਾ ਖੇਤਰ = 324 ਫਰਸ਼ ਮੀਟਰ

$$\text{Area} = 324 \text{ cm}^2$$

$$l \times b = 324 \text{ cm}^2$$

$$36 \times b = 324 \text{ cm}^2$$

$$b = \frac{324 \text{ cm}^2}{36 \text{ cm}} = 9 \text{ cm}$$

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

$$= 2(36 + 9) = 2(45) = 90 \text{ cm/ਮੀਟਰ}$$

8. ਇੱਕ ਵਰਗਾਕਸ਼ ਮੈਦਾਨ ਦਾ ਖਰੀਦਾਰ 100 ਮੀਟਰ ਦੇ, ਇੱਕ  
ਖਰੀਦਾਰ ਖਰੀਦੇ।

The perimeter of a square field is 100 m.  
Find its area.

$$\text{Perimeter of Sq} = 100 \text{ m}$$

Ans: ਵਰਗ ਦਾ ਖਰੀਦਾਰ = 100 ਮੀਟਰ

$$4 \times \text{ਸਾਈਡ} = 100 \text{ m}$$

$$\text{Side} = \frac{100}{4} = 25 \text{ m}$$

$$\begin{aligned} \text{Area ਖਰੀਦਾਰ} &= \text{ਸਾਈਡ} \times \text{ਸਾਈਡ} / \text{Side} \times \text{Side} \\ &= 25 \text{ m} \times 25 \text{ m} \\ &= 625 \text{ m}^2 / \text{ਮੀਟਰ}^2 \end{aligned}$$



9. ~~दिए गए~~ ~~आदि~~ ~~चि~~ ~~म~~ ~~ही~~ ~~लि~~ ~~खा~~ ~~ही~~ ~~20~~ ~~म~~ ~~म~~ ~~के~~ ~~आ~~ ~~दी~~ ~~ख~~ ~~ंड~~ ~~का~~ ~~अ~~ ~~नु~~ ~~स~~ ~~340~~ ~~व~~ ~~र्ग~~ ~~म~~ ~~म~~ ~~के~~ ~~।~~ ~~दि~~ ~~म~~ ~~का~~ ~~अ~~ ~~भि~~ ~~म~~ ~~य~~ ~~ज~~ ~~त~~ ~~ह~~ ~~ै~~ ~~।~~

Area of a rectangle of length 20 cm is 340 sq. cm. Find its perimeter.

Ans: ~~आ~~ ~~दि~~ ~~त~~ ~~का~~ ~~अ~~ ~~नु~~ ~~स~~ ~~340~~ ~~व~~ ~~र्ग~~ ~~म~~ ~~म~~ ~~के~~ ~~।~~ ~~दि~~ ~~म~~ ~~का~~ ~~अ~~ ~~भि~~ ~~म~~ ~~य~~ ~~ज~~ ~~त~~ ~~ह~~ ~~ै~~ ~~।~~

$$\text{Area of rectangle} = l \times b$$

$$340 \text{ cm}^2 = 20 \text{ cm} \times b$$

$$b = \frac{340 \text{ cm}^2}{20 \text{ cm}}$$

$$b = 17 \text{ cm / मम}$$

$$\text{परिमाप} = 2(l + b)$$

$$= 2(20 + 17)$$

$$= 2(37)$$

$$= 74 \text{ cm / मम}$$

10. ~~दिए~~ ~~य~~ ~~ख~~ ~~ंड~~ ~~की~~ ~~टा~~ ~~इ~~ ~~ल~~ ~~का~~ ~~मा~~ ~~प~~ ~~15~~ ~~म~~ ~~म~~ ~~×~~ ~~20~~ ~~म~~ ~~म~~ ~~के~~ ~~।~~ ~~मा~~ ~~प~~ ~~4~~ ~~मी~~ ~~०~~ ~~×~~ ~~6~~ ~~मी~~ ~~०~~ ~~की~~ ~~दिए~~ ~~दी~~ ~~य~~ ~~त~~ ~~क~~ ~~इ~~ ~~स~~ ~~क~~ ~~ह~~ ~~ी~~ ~~कि~~ ~~सी~~ ~~म~~ ~~ें~~ ~~टा~~ ~~इ~~ ~~ल~~ ~~की~~ ~~सं~~ ~~ख~~ ~~त~~ ~~ह~~ ~~ै~~ ~~।~~

A marble tile measure 15cm X 20cm. How many tiles will be required to cover a wall of size 4m X 6m?

Ans: ~~कि~~ ~~सी~~ ~~म~~ ~~ें~~ ~~क~~ ~~इ~~ ~~स~~ ~~क~~ ~~ह~~ ~~ी~~ ~~कि~~ ~~सी~~ ~~म~~ ~~ें~~ ~~टा~~ ~~इ~~ ~~ल~~ ~~की~~ ~~सं~~ ~~ख~~ ~~त~~ ~~ह~~ ~~ै~~ ~~।~~

$$\text{Number of tiles required} = \frac{\text{Area of wall}}{\text{Area of one tile}}$$

$$1 \text{ मी} = 100 \text{ cm}$$

$$= 800 \text{ tiles} = \frac{4000 \text{ cm} \times 6000 \text{ cm}}{15 \text{ cm} \times 20 \text{ cm}}$$

11. કુજા 75 મી: થોલું દિરું હગગારાં ચેડા લેં ચેયગા  
રગલ સણી 5 રૂપ ચૂડી હગગા મીટર હી રડ  
કાલ સગગડ ચડા રડ।

Find the cost of levelling the square field of side 75 m at the rate of Rs 5 per square metre.

Ans: હગગારાં ચેડા હા ચેડગલ = કુજા x કુજા  
Area of sq. field = Side x Side  
=  $75\text{m} \times 75\text{m}$   
= 5625 હગગ મીર

રૂલ સગગડ =  $5625\text{m}^2 \times 5\text{રૂ}/\text{m}^2$   
Total Cost = Rs. 28125

12. માય 2 સમ x 1.5 સમ હીજાં રીલીજાં ટિરડાં,  
6 સમ x 12 સમ માય હી રાગગા હી મીટ 'ડે  
ઢિયરાહીજાં હા મરહીજાં રડ?

How many stamps of size 2cm x 1.5cm can be pasted on a sheet of paper of size 6cm x 12cm?

Ans: રૂલ ટિરડાં =  $\frac{\text{મીટ હા ચેડગલ}}{1 \text{ ટિરડ હા ચેડગલ}}$   
Total stamps =  $\frac{\text{Area of sheet}}{\text{Area of 1 stamps}}$   
=  $\frac{6\text{cm} \times 12\text{cm} \times 10\text{cm}}{2\text{cm} \times 1.5\text{cm}}$   
= 24 ટિરડાં/stamps



13 (i) ਜੇਕਰ ਇੱਕ ਵਰਗ ਦੀ ਭੁਜਾ ਤਿਗੁਣੀ ਕਰ ਦਿੱਤੀ ਜਾਵੇ, ਤਾਂ ਇਸਦਾ ਖੇਤਰਫਲ ਕਿੰਨੇ ਗੁਣਾ ਹੋ ਜਾਵੇਗਾ ?

what will happen to the area of a square if its side is trebled (tripled)?

Ans. →

ਵਰਗ ਦੀ ਭੁਜਾ =  $a$  cm

Side of Sq =  $a$  cm

ਖੇਤਰਫਲ = ਭੁਜਾ  $\times$  ਭੁਜਾ

$$\text{Area} = a \times a \\ = a^2$$

ਵਰਗ ਦੀ ਭੁਜਾ =  $3a$  cm

Side of Sq =  $3a$  cm

ਖੇਤਰਫਲ = (ਭੁਜਾ) $^2$

$$\text{Area} = (3a)^2 \\ = 9a^2$$

ਖੇਤਰਫਲ 9 ਗੁਣਾ ਹੋ ਜਾਵੇਗਾ।

Area 9 times

(ii) ਜੇਕਰ ਇੱਕ ਆਇਤ ਦੀ ਲੰਬਾਈ ਨੂੰ ਅੱਧਾ ਅਤੇ ਚੌੜਾਈ ਨੂੰ ਦੁੱਗਣਾ ਕਰ ਦਿੱਤਾ ਜਾਵੇ ਤਾਂ ਇਸਦਾ ਖੇਤਰਫਲ ਕਿੰਨੇ ਗੁਣਾ ਹੋ ਜਾਵੇਗਾ ?

what will happen to the area of a rectangle if its length is halved and breadth is doubled?

Ans. →

ਆਇਤ ਦਾ ਖੇਤਰ = ਲ  $\times$  ਚੌ

$$\text{Area of rectangle} = l \times b \\ = lb \text{ ਇਕਾਈ}^2$$

$$\text{if } l = \frac{l}{2} \quad b = 2b$$

$$\text{then Area ਖੇਤਰ} = \frac{l}{2} \times 2b \\ = lb \text{ ਇਕਾਈ}^2$$

ਖੇਤਰਫਲ ਸਮਾਨ ਰਹੇਗਾ।

equal Area No effect

what will happen to the area of a square if its side is halved?

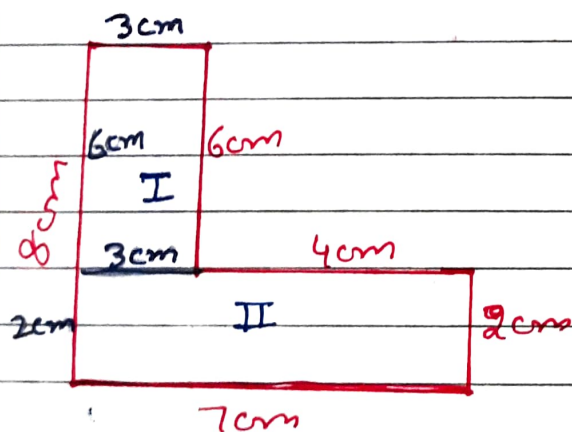
$\text{इरग हा ये०} = (\text{उभा})^2$        $\text{इरग हा ये०} = (\text{उभा})^2$   
 $\text{Area} = (\text{Side})^2$        $\text{Area} = (\text{Side})^2$   
 $= a^2$        $= (a)^2$

ਬਰਾਬਰ ਦਿੱਤੇ ਖੇਤਾਫੀ ਹੇਠਾਂ ਤੇਜ਼ਾ  
Area one fourth times  $= \frac{a^2}{4}$

14. ਜੇਕਰ ਦੋ ਸਿੱਤਰਾਂ ਦੀ ਫਰਕਾਂ ਅਤੇ ਅਵਸਥਾਵਾਂ ਵਿੱਚ  
ਇਹ ਦੋ ਖੇਤਰਾਂ ਪਤਾ ਹੋਣ।

Find the area of the following figures by splitting it into rectangles and squares

Ans  $\Rightarrow$  (i)



રૂંછ યંત્રવ્યવસ્થા = યં. (જાગિડ I) + યં. (જાગિડ II)

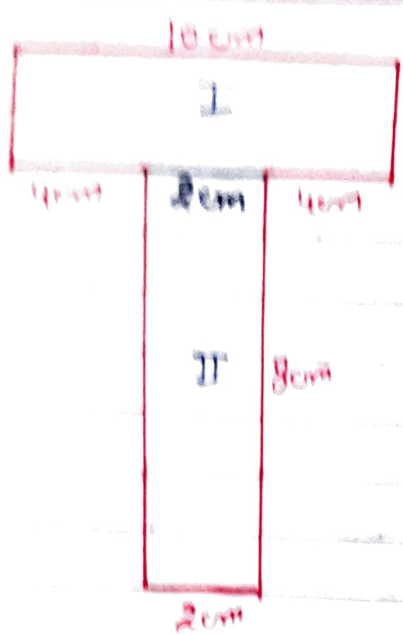
$$\begin{aligned} \text{Total Area} &= (6 \times 3) \text{ पिरामिड}^2 + (7 \times 2) \text{ पिरामिड}^2 \\ &= 18 \text{ unit}^2 + 14 \text{ unit}^2 \end{aligned}$$

$$= 32 \text{ square unit/cm}^2$$

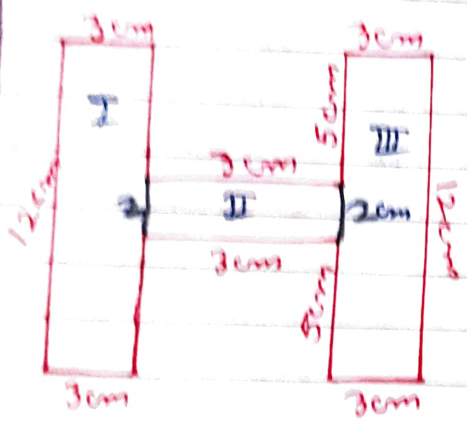
32 ਫੁੱਟ ਪਿਰਾਈ/ਸਮ<sup>2</sup>



(iii)

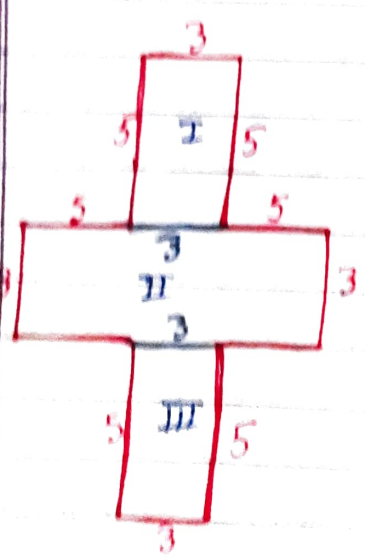


$$\begin{aligned} \text{Area} &= \text{I} + \text{II} \\ \text{જો} &= (10 \times 2) + (2 \times 8) \\ \text{Area} &= 20 + 16 \\ &= 36 \text{ ચોરસ મી.} \\ &= 36 \text{ sq. cm.} \end{aligned}$$



$$\begin{aligned} \text{Area} &= \text{I} + \text{II} + \text{III} \\ \text{જો} &= (12 \times 3) + (2 \times 3) + (12 \times 3) \\ &= (36 + 6 + 36) \text{ cm}^2 \\ &= 78 \text{ sq. cm.} \\ &= 78 \text{ ચોરસ મી.} \end{aligned}$$

(iv)



$$\begin{aligned} \text{Area} &= \text{I} + \text{II} + \text{III} \\ \text{જો} &= (5 \times 3) + (13 \times 3) + (5 \times 3) \\ &= 15 + 39 + 15 \\ &= 69 \text{ ચોરસ ઇંચો} \\ &= 69 \text{ sq. ઇંચો} \end{aligned}$$

15. ਖਾਲੀ ਥਾਂ ਭਰੋ :-

Fill in the blanks :-

(i) 1 ਵਰਗ ਮੀਟਰ = 10000 ਵਰਗ ਸਮ

1 square metre = 10000 sq. cm.

(ii) 1 ਵਰਗ ਸਮ = 100 ਵਰਗ ਮਿ:ਮਿ:

1 square cm = 100 sq. mm.

(iii) ਯਾਦ ਰੱਖੋ ਚਾ ਖੇਤਰਫਲ = ਲੰਬਾਈ x ਰੋੜਾਈ

Area of rectangle = length x breadth

(iv) ਲੰਬਾਈ = ਖੇਤਰਫਲ ÷ ਰੋੜਾਈ

Length = Area ÷ breadth

(v) ਵਰਗ ਚਾ ਖੇਤਰਫਲ = ਭੁਜਾ x ਭੁਜਾ

Area of square = Side x Side

