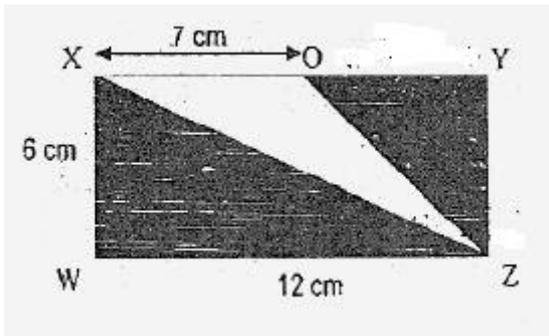


WXYZ is a rectangle. Find the area of the shaded part.



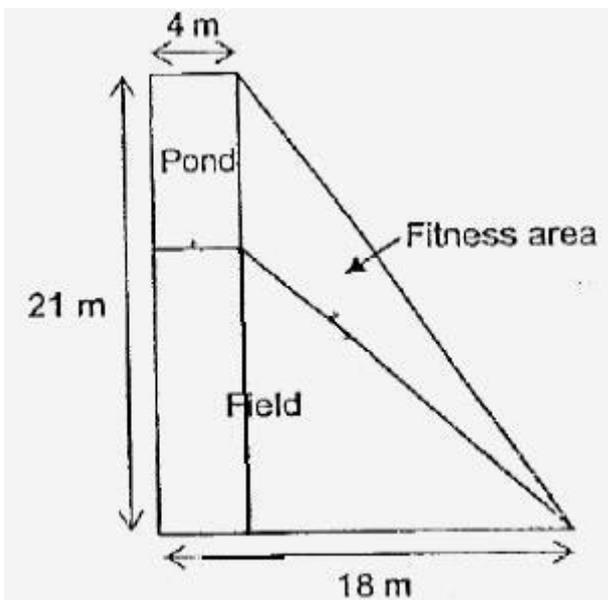
**Solution**

Area of rectangle ----  $12 \text{ cm} \times 6 \text{ cm} = 72 \text{ square cm}$

Area of unshaded triangle ----  
 $\frac{1}{2} \times \text{base} \times \text{height}$   
 $= \frac{1}{2} \times 7 \text{ cm} \times 6 \text{ cm} = 21 \text{ square cm}$

Area of shaded part -----  
 $(72 - 21) \text{ square cm} = \mathbf{51 \text{ square cm (Answer)}}$

The figure below shows a park which is made up of a triangular fitness area, a rectangular pond and a field in the shape of a trapezium. The length of the pond is twice its breadth.



- a) The cost of fencing material is \$3 per meter. How much will it cost to fence up the pond?
- b) What is the area of the park?

**Solution**

a)  
 Length of pond -----  $2 \times 4 \text{ m} = 8 \text{ m}$   
 Perimeter of pond -----  $2 \times (8 + 4) \text{ m} = 24 \text{ m}$

1 m ----- \$3  
 24 m -----  $\$3 \times 24 = \$72$

**Answer: It will cost \$72 to fence up the pond.**

**b)**

Area of rectangle -----

$$21 \text{ m} \times 4 \text{ m} = 84 \text{ square m}$$

Area of triangle -----

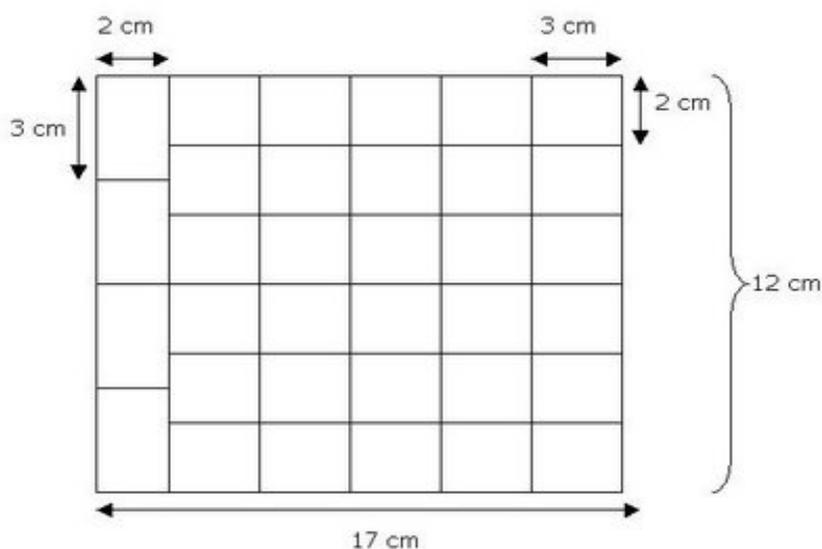
$$\frac{1}{2} \times 14 \text{ m} \times 21 \text{ m} = 147 \text{ square m}$$

Total area of the park -----  $(84 + 147)$  square m = **231 square**

**A rectangular piece of cardboard measures 17 cm by 12 cm. Sushila cuts the greatest number of rectangular pieces, each measuring 3 cm by 2 cm, from the cardboard. What is the total area of all the pieces cut?**

**Solution**

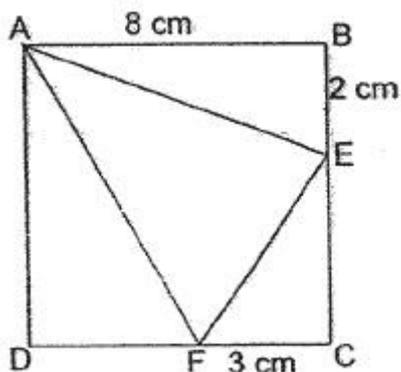
The diagram below is not drawn to scale



34 pieces of small rectangles can be cut without any cardboard left.

Area used -----  $17 \text{ cm} \times 12 \text{ cm} = \mathbf{204 \text{ square cm (Answer)}}$

**In the figure, ABCD is a square of side 8 cm. BE is 2 cm and FC is 3 cm. Find the area of Triangle AEF.**



**Solution**

Area of Square ABCD -----  $8 \text{ cm} \times 8 \text{ cm} = 64 \text{ square cm}$

Area of Triangle ABE -----  $\frac{1}{2} \times 8 \text{ cm} \times 2 \text{ cm} = 8 \text{ square cm}$

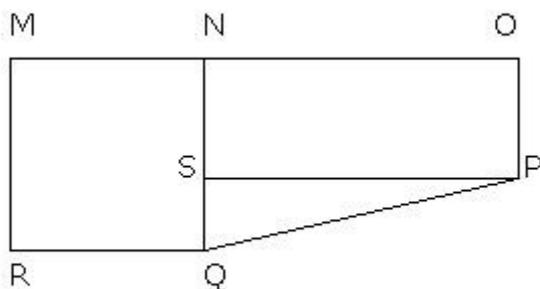
Area of Triangle CEF -----  $\frac{1}{2} \times 3 \text{ cm} \times 6 \text{ cm} = 9 \text{ square cm}$

Area of Triangle ADF -----  $\frac{1}{2} \times 5 \text{ cm} \times 8 \text{ cm} = 20 \text{ square cm}$

Area of Triangle AEF -----  
(64 – 8 – 9 – 20) square cm = **27 square cm (Answer)**

The figure shown below is made up of a square, a rectangle and a right-angled triangle. The area of the square MNQR is 49 square cm and the area of the rectangle NOPS is 60 square cm. OP is 4 cm.

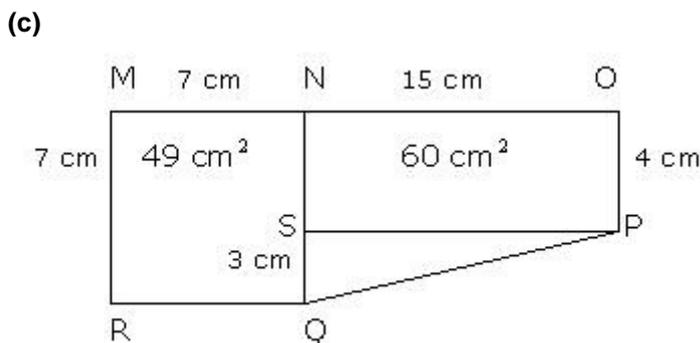
- (a) Find the length of MR
- (b) Find the length of SP
- (c) Find the area of the triangle PSQ



**Solution**

(a)  
Area of square MNQR = 49 square cm.  
1 side is therefore 7 cm (7 x 7)

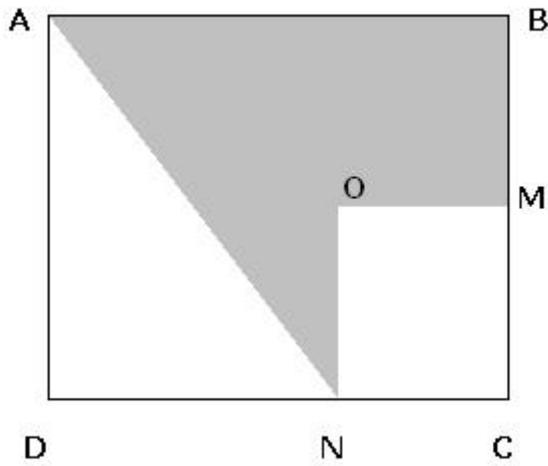
(b)  
Area of rectangle NOPS is 60 square cm.  
60 square cm = SP x 4 cm  
SP = 60 square cm divided by 4 cm = 15 cm  
**Answer: 15 cm**



NQ = 7 cm, therefore  
SQ = 7 cm – 4 cm = 3 cm

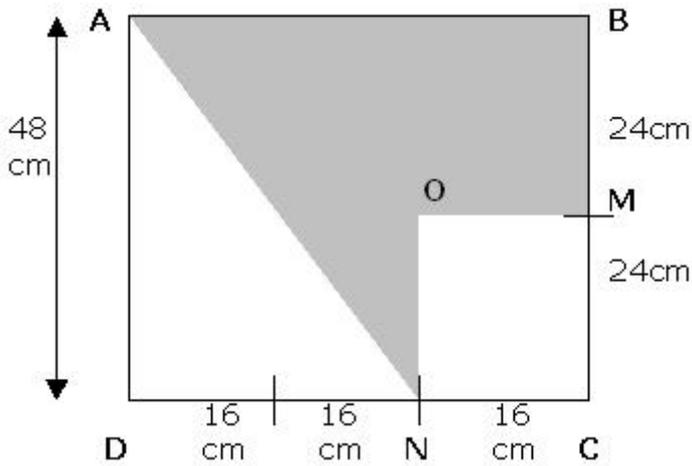
Area of triangle PSQ =  $\frac{1}{2} \times \text{base} \times \text{height}$   
=  $\frac{1}{2} \times 15 \text{ cm} \times 3 \text{ cm}$   
= 22.5 square cm

**Answer: 22.5 square cm**



ABCD is a square. AD = 48 cm. Given that DN is twice as long as NC and BM = MC, find the area of the unshaded part.

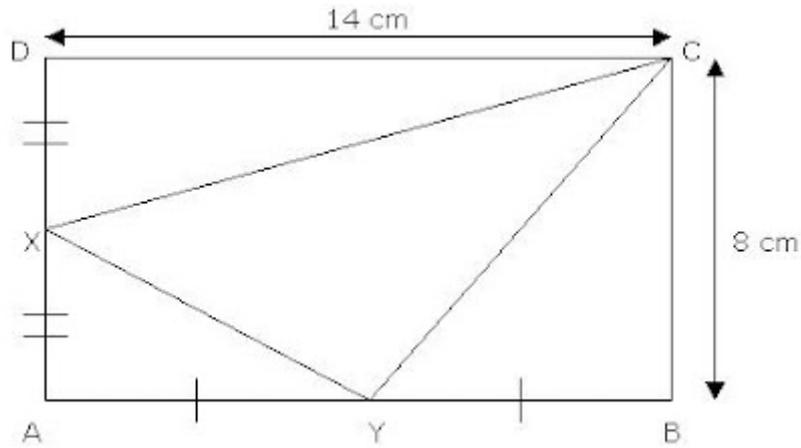
**Solution**



Area of Triangle ADN -----  $\frac{1}{2} \times \text{base} \times \text{height}$   
 $= \frac{1}{2} \times 32 \text{ cm} \times 48 \text{ cm} = 768 \text{ square cm}$

Area of OMCN -----  $24 \text{ cm} \times 16 \text{ cm} = 384 \text{ square cm}$

Total unshaded area -----  $(768 + 384) \text{ square cm} = \mathbf{1152}$



ABCD is a rectangle (not drawn to scale).  $AX = XD$  and  $AY = YB$ . Find the area of triangle CXY.

**Solution**

Area of rectangle ----- length x breadth  
 $= 14 \text{ cm} \times 8 \text{ cm} = 112 \text{ square cm}$

Area of Triangle CDX -----  $\frac{1}{2} \times \text{base} \times \text{height}$   
 $= \frac{1}{2} \times 14 \text{ cm} \times 4 \text{ cm} = 28 \text{ square cm}$

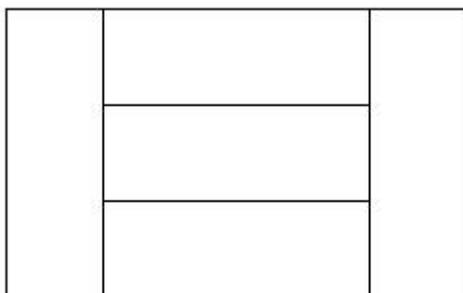
Area of Triangle AXY -----  $\frac{1}{2} \times 7 \text{ cm} \times 4 \text{ cm} = 14 \text{ square cm}$

Area of Triangle CBY -----  $\frac{1}{2} \times 7 \text{ cm} \times 8 \text{ cm} = 28 \text{ square cm}$

Area of Triangle CXY -----  
 Area of rectangle – Area of Triangle CDX – Area of Triangle AXY – Area of Triangle BCY  
 $= (112 - 28 - 14 - 28) \text{ square cm}$   
 $= 42 \text{ square cm}$

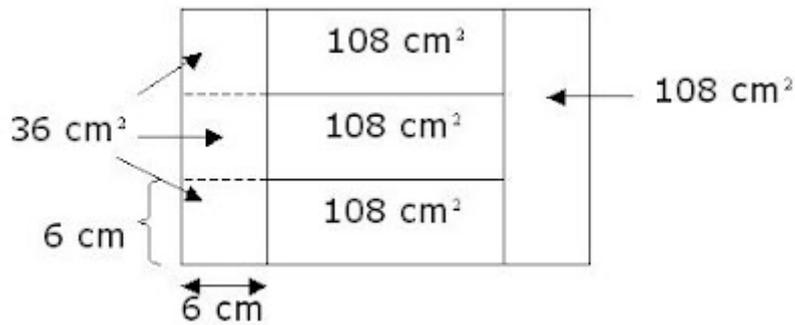
**Answer: Area of Triangle CXY is 42 square cm.**

**The figure below is made up of five identical rectangles. If the total area of the figure is 540 square cm, find the perimeter of one rectangle.**



**Solution**

Area of 1 rectangle ----- 540 square cm divided by 5 = 108 square cm



Length of rectangle is 3 times breadth rectangle, therefore, we can divide 1 rectangle into 3 equal parts as shown above.

The area of 1 square above -----  $108 \text{ square cm} \div 3 = 36 \text{ square cm}$

The side of this 1 unit square has to be 6 cm ( $6 \times 6 = 36$ )

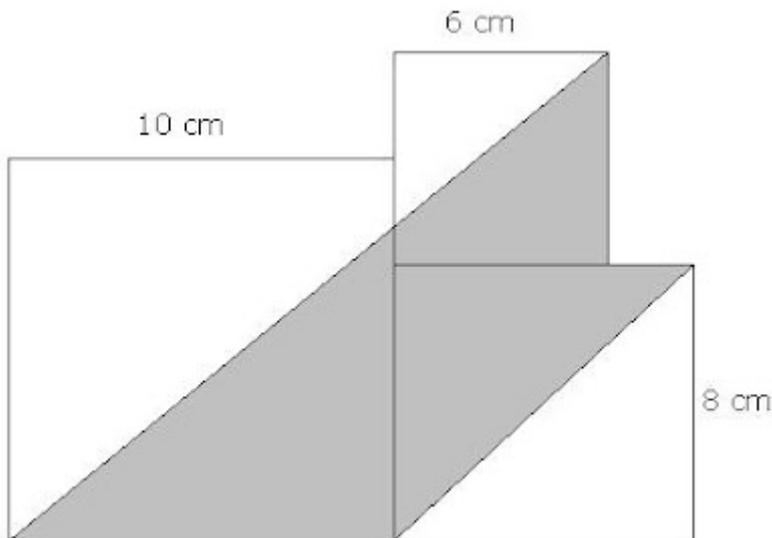
Since 1 side of the square is 6 cm, the length of 1 rectangle is -----  
 $6 \text{ cm} \times 3 = 18 \text{ cm}$

The perimeter of 1 rectangle is therefore,

$$18 \text{ cm} + 6 \text{ cm} + 18 \text{ cm} + 6 \text{ cm} = 48 \text{ cm}$$

**Answer: The perimeter of one rectangle is 48 cm.**

**The diagram below is made up of 3 squares. Find the area of the shaded area.**



**Solution**

Area of shaded area is

$$\text{Area of triangle ADC} - \text{Area of triangle BGC} + \text{Area of triangle EFG}$$

Area of triangle ADC  
 $\frac{1}{2} \times 16\text{cm} \times 14\text{cm} = 112 \text{ square cm}$

Area of triangle BGC  
 $\text{CG} = 6 \text{ cm}$  because  $\text{EG} = \text{EF} = 2 \text{ cm}$   
 Therefore area =  $\frac{1}{2} \times 6\text{cm} \times 6\text{cm} = 18 \text{ square cm}$