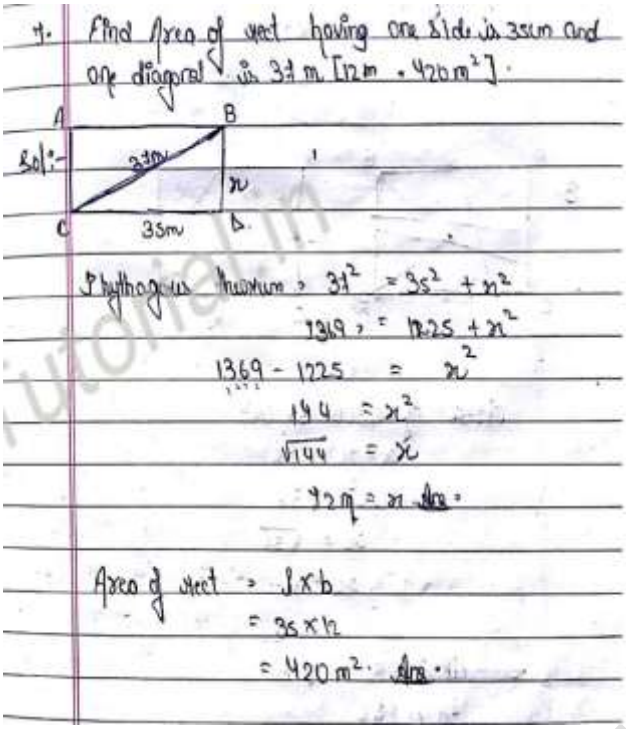
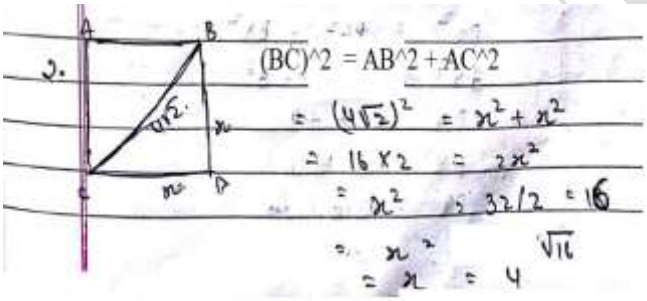
7th Mensuration Test Paper – 01

1. Find area of rectangle haying one side 35m and one diagonal is 37m [12m, 420m^2]

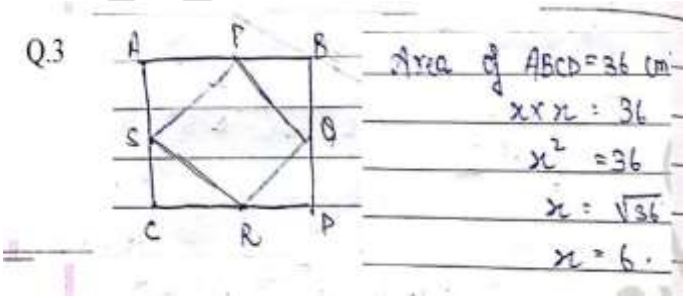


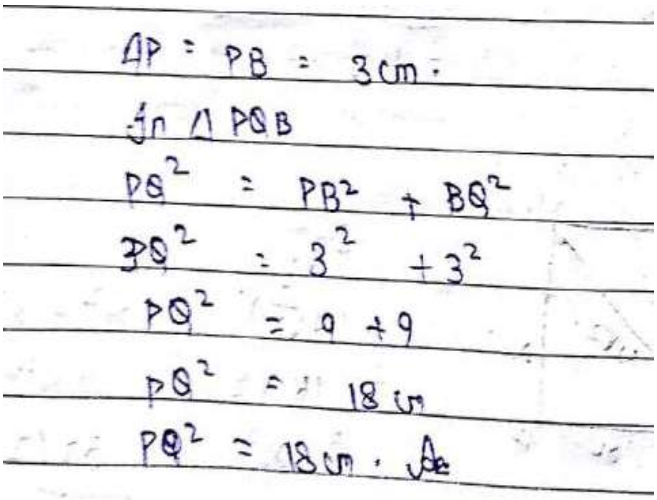
2. Find area of square having diagonal $4\sqrt{2}$m?



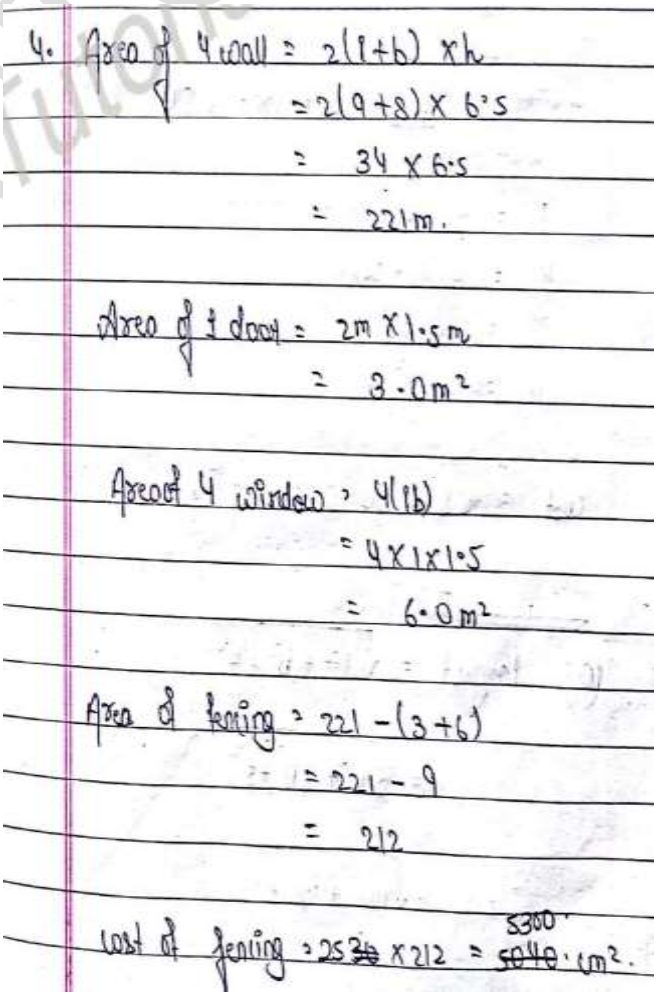
$Area\ of\ square = (side)^2 = 4^2 = 16\ m^2$

3. Find the area of square that is obtained by joining midpoint of square ABCD of area 36cm^2.

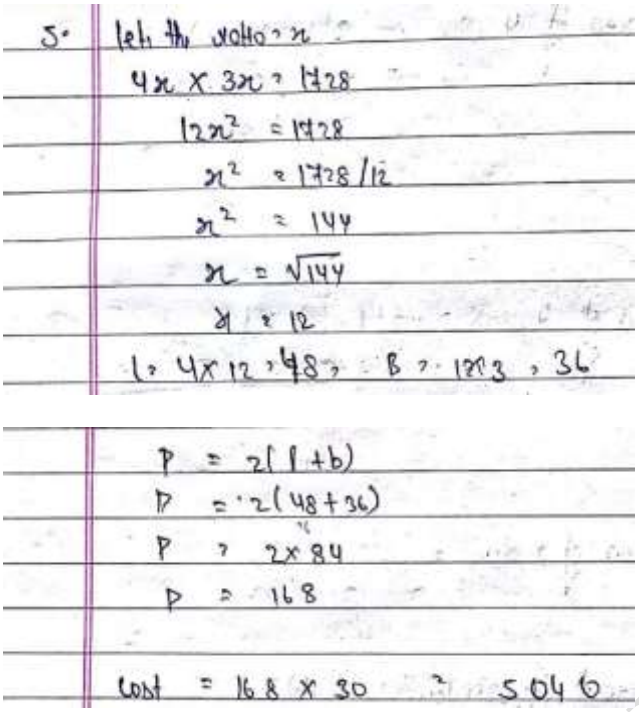




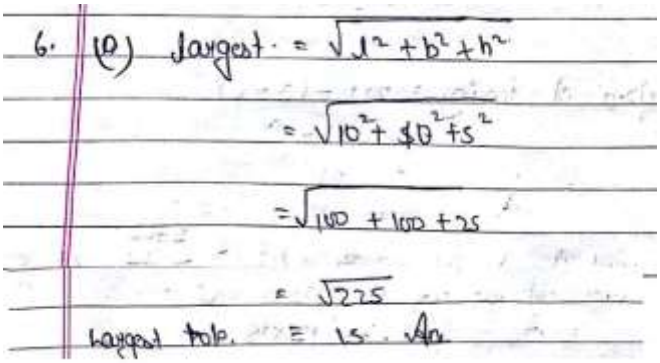
4. A room have dimensions$9m \times 8m \times 6.5m$. It has one door of dimensions $(2m \times 1.5m)$ and four windows each (1.5m x 1m). Find the cost of white washing at Rs. 25 per m^2 [Rs. 5300]



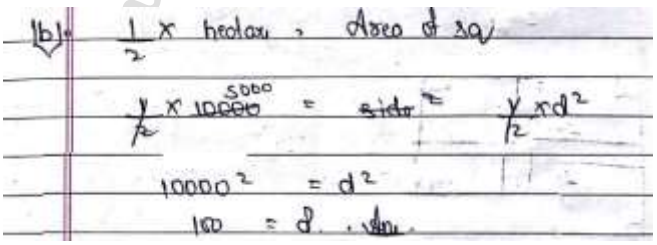
5. The sides of rectangle are in ratio $4:3$.If its area is 1728m' Find the cost of fencing at Rs. 30 per m^2 [Rs. 5040]



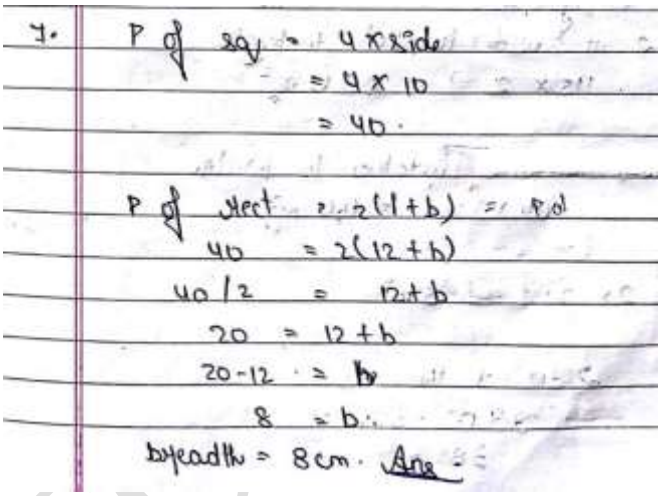
6. (a) Find the largest pole placed in a room 10mx10mx5m?

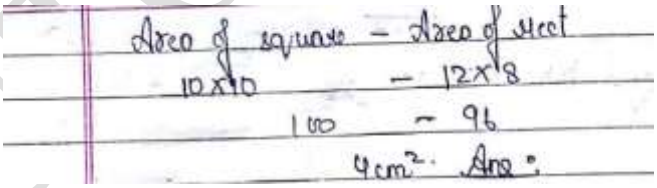


(b) If Area of square of is $\frac{1}{2}$ hectare. Find its diagonal?

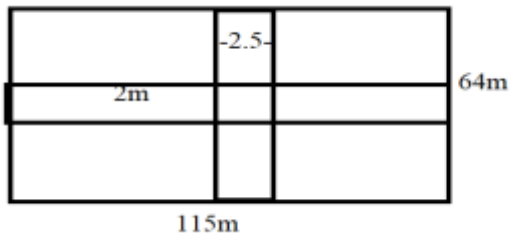


7. A wire is in form of square side 10cm. If wire is rebent into a rectangle of length 12cm find its breadth. Which figure has more area and by how much [8cm, $4cm^2$]





8.A rectangular park is 115m by 64m has two cross road at right angle one 2m wide parallel to length and other 2.5 m wide parallel to breadth. Find cost of gravelling cross road of at 60 per m^2.[Rs.23100]



Area of road Parallel to length = 115 x 2 =230 m2

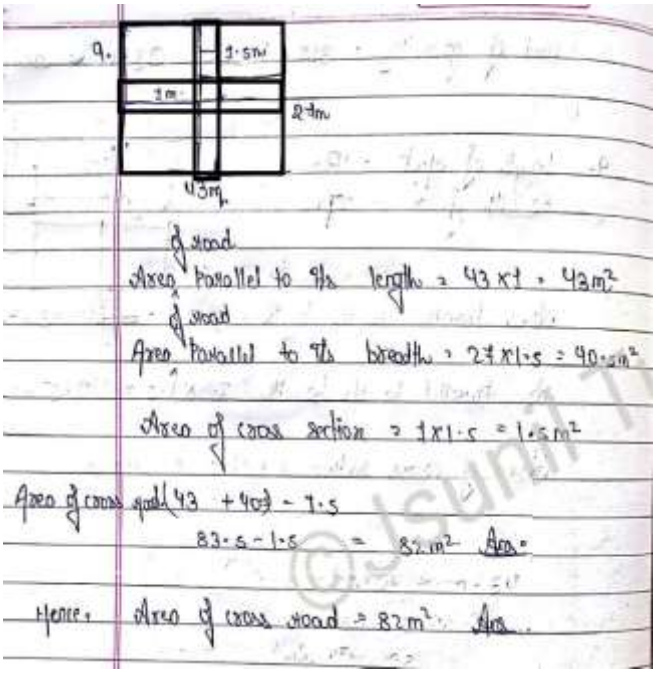
Area of road Parallel to breadth = 64 x 2.5 = 160 m2

Area Of cross section of two road = 2 x 2.5 = 5m2

Area of cross roads = 230 + 160 – 5 = 390-5 = 385

Cost of gravelling cross road of at 60 per m^2 = 385 x 60 = Rs.23100

9. A rectangle lawn is 43m by 27m has inside path of width 1m parallel to length and 1.5 m parallel to breadth. [161m^2]



Area of road parallel to the length = $43 \times 1 = 43m^2$

Area of road parallel to the breadth = $27 \times 1.5 = 40.5m^2$

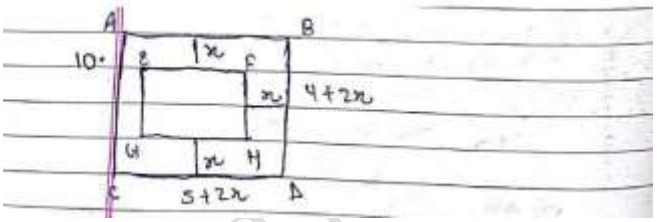
Area of cross section = $1 \times 1.5 = 1.5m^2$

Area of cross road $(43 + 40.5) - 1.5$

$83.5 - 1.5 = 82m^2$ Ans.

Hence, Area of cross road = $82m^2$. Ans.

10. A room 5m long and 4m wide is surrounded by a verandah. If the verandah occupies an area of 22m^2 .find the Width of veranda? [1 m]



Area of EFGH = $(4+2x)(5+2x)$

$= 20 + 8x + 10x + 4x^2$

$= 20x + 18x + 4x^2$

Area of verandha = 22

$20 + 18x + 4x^2 - 20 = 22$

$2(9x + 2x^2 - 11) = 0$

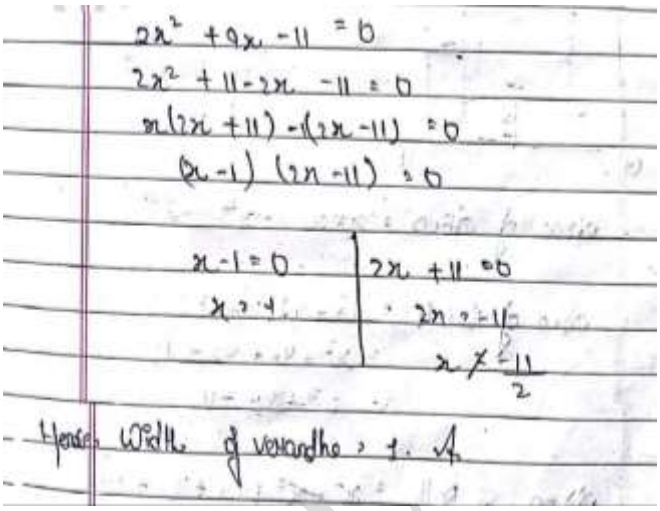
$18x + 4x^2 - 22 = 0$

$2x^2 + 9x - 11 = 0$

$2x^2 + 11 - 2x - 11 = 0$

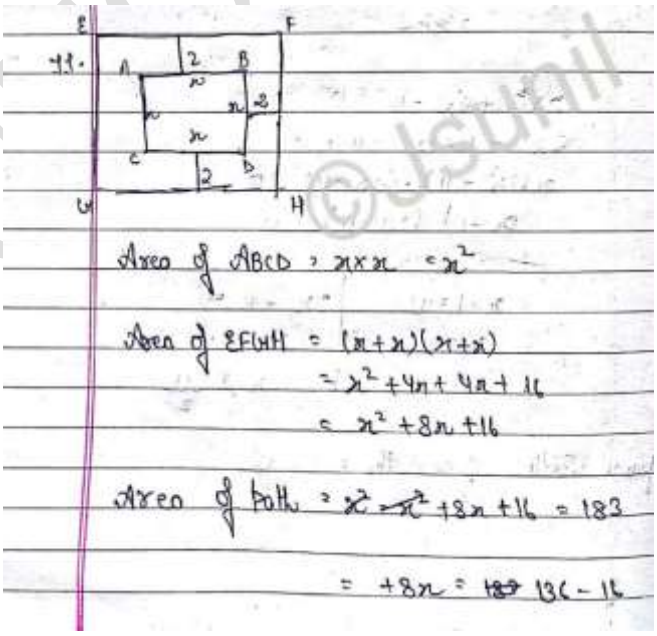
$x(2x + 11) - 1(2x - 11) = 0$

$(x - 1)(2x - 11) = 0$



Hence, Width of verandha = 1 m.

11. A square lawn has 2m wide path surrounding it. If the area of path is 136m^2. Find the area of lawn? [225m^2]



Area of ABCD = $x \times x = x^2$

Area of EFGH = $(x+x)(x+x)$

$= x^2 + 4x + 4x + 16$

$= x^2 + 8x + 16$

Area of path = $x^2 - x^2 + 8x + 16 = 136$

$+8x = 136 - 16$

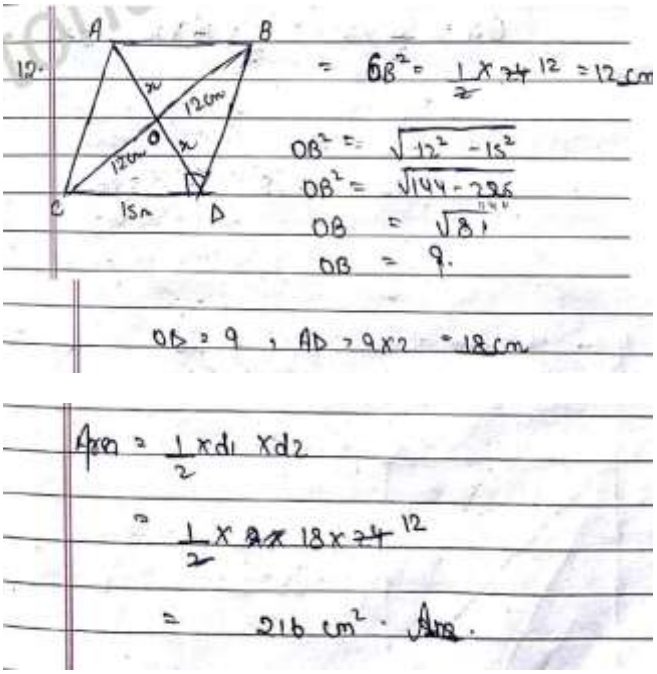
$8x = 120$

$x = 120/8$

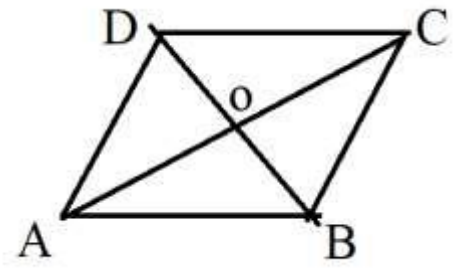
$x = 15$

Area of lawn = $15 \times 15 = 225 m^2$. Ans.

12. Find area of rhombus one side 15 cm and one diagonal 24cm.



13. If area of rhombus is $96m^2$ and one of its diagonal is 16cm. find its perimeter?



AD= d1 = 16cm => OA =OC = 8cm

$$Area\ of\ rhombus\ =\ ½\ d1xd2 => 96\ = \frac{1}{2}\ x\ 16\ x\ d2$$

$$=>\ d2 = \frac{96\ x\ 2}{16}\ = 12cm$$

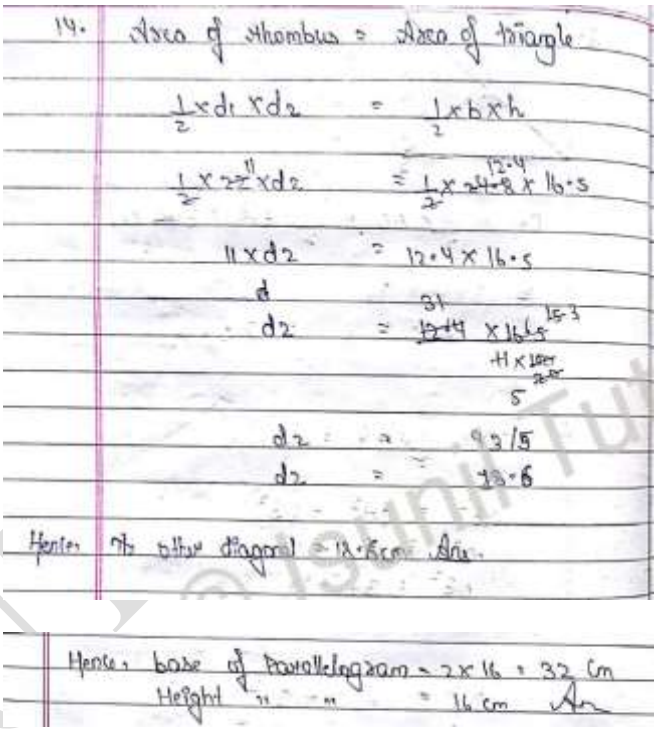
BD = 12 => OB = OD = 6

$$Rt.\Delta\ AOB\ , AB^2 = OA^2 + OB^2 = 8^2 + 6^2 = 100$$

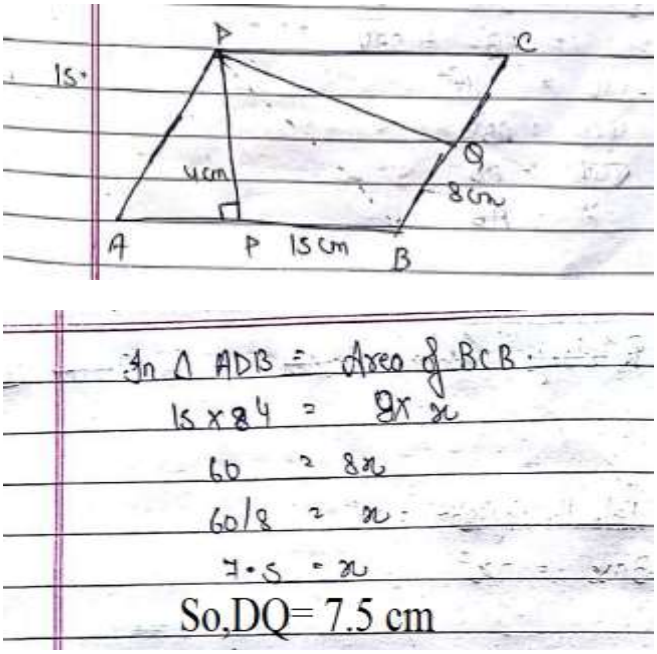
$$=> AB = \sqrt{100} = 10\ cm$$

Perimeter of Rhombus = 4 x side = 4 x 10 = 40cm

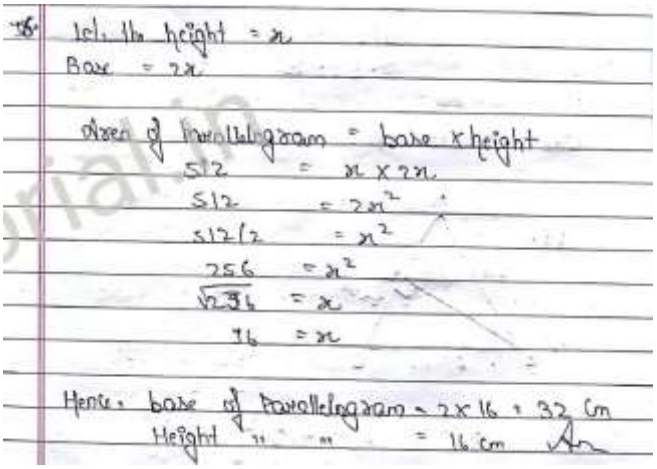
14. The area of a rhombus is equal to area of a triangle whose base and corresponding height are 24.8cm and 16.5cm respectively. If one of the diagonal of rhombus is 22 cm find other diagonal?



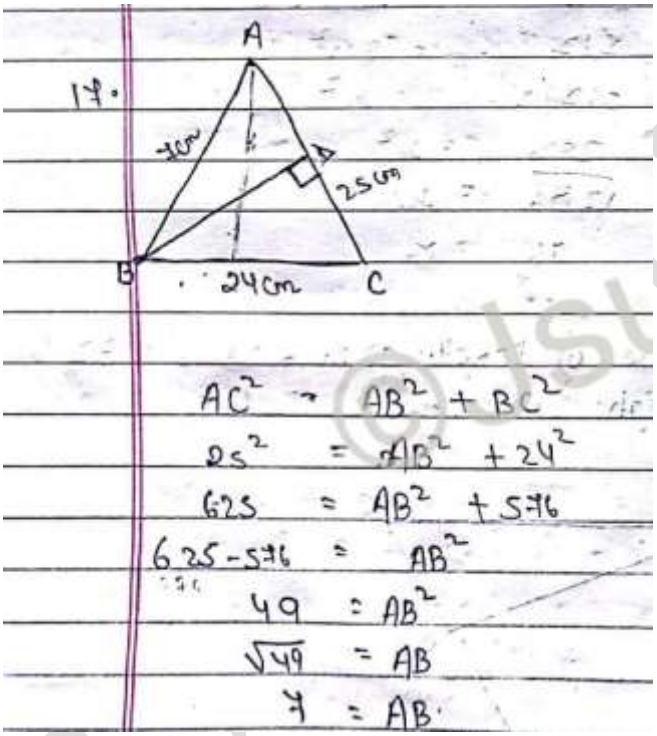
15. The adjacent side of parallelogram are 15cm and 8 cm. If distance between the longer sides is 4 cm. Find the distance between shorter sides?

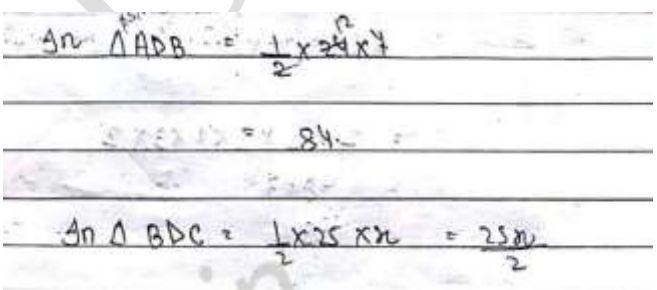


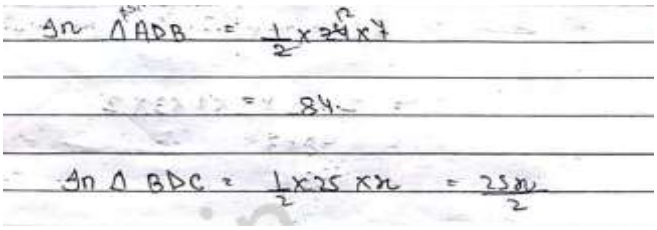
16. The base of parallelogram is twice its height having area 512cm^2. Find base and height?



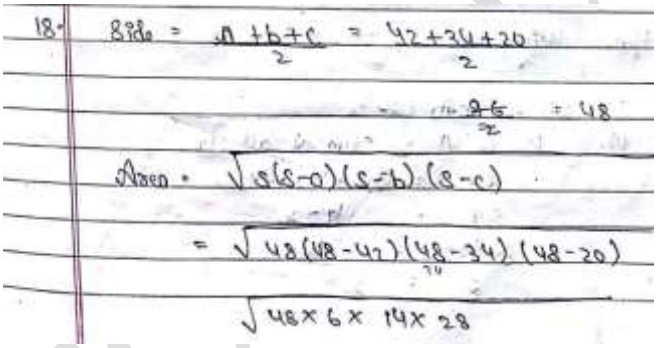
17. Find area of triangle ABC, BC = 24cm, AC =25cm if BD⊥ AC find BD [6.72]

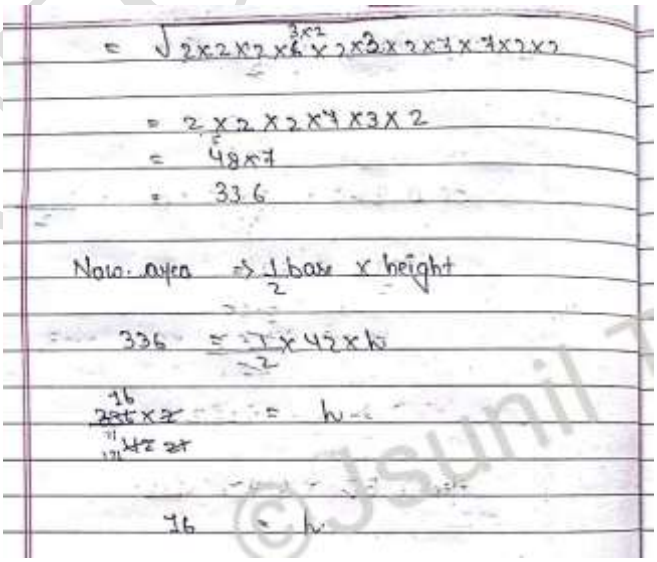




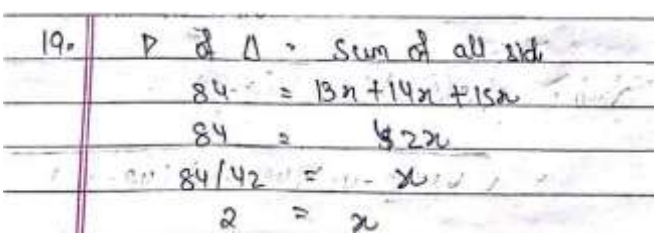


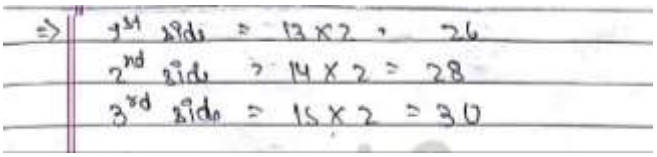
18. Find the area and height on longest side of triangle sides 42cm, 34cm and 20cm.

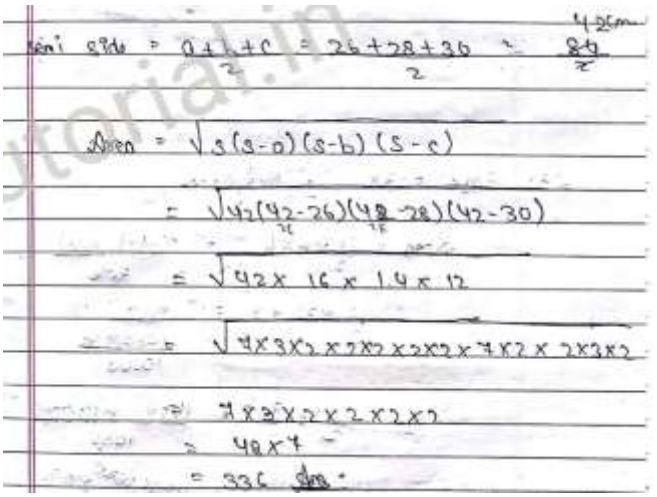




19. Find area of triangle whose sides are in 13:14:15 and perimeter 84cm







20. The height of an equilateral triangle is √6. Find its area.

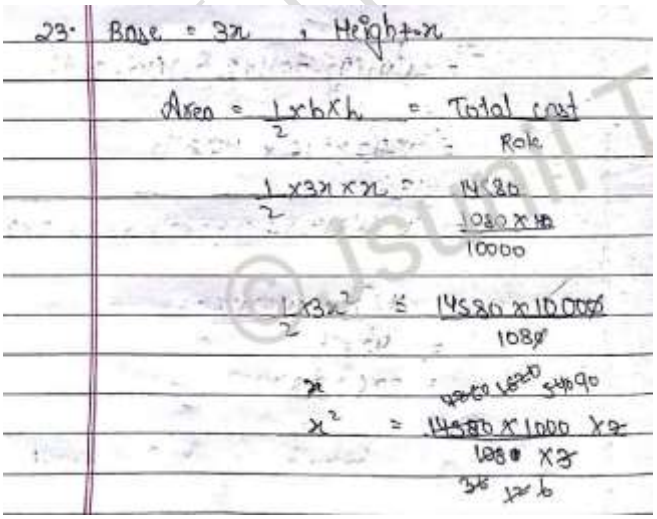
The height of an equilateral triangle = √6

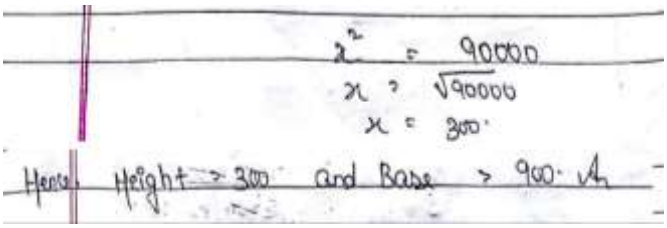
$= \frac{\sqrt{3}}{2} a = \sqrt{6} \Rightarrow a = \frac{\sqrt{6} \times 2}{\sqrt{3}} = 2\sqrt{2}$

Area of equilateral triangle= $\frac{\sqrt{3}}{4} a^2 = \frac{\sqrt{3}}{4} \left(2\sqrt{2}\right)^2$

$= \frac{\sqrt{3}}{4} x\, 8 = 2\sqrt{3}$

21. The base of a triangular field is three times its height. If the cost of cultivating the field at Rs 1080 per hectare is Rs 14580, find its base and height.





7th Mensuration Test Paper – 02

1. The area of a rectangular field is 3584 meter square and its length is 64m. A boy runs around the field at the rate of 8 km/h. how tong will he take to go 5 times around it.

Ans: Breadth of rectangular field = $\frac{Area}{length}$

$$= \frac{3584}{64} = 56$$

Perimeter of rectangular field = $2(56 + 64)$

$$= 2\, x\, 120 = 240m$$

Distance covered in 5 times running around the field = 240x5= 12000m = 1.2 km, Speed = 8km/h

Time = $\frac{Distance}{speed} = \frac{1.2}{8}\, x\, 60\, min$ = 9 min

2. The area of a square is 16200 meter square. Find the length of its diagonal.