



**Work Sheet – 04 (Mathematics) for  
class – Nine (11.10.2020) Chapter-  
Sixteen, Exercise - 16.2**

**Mensuration**

**Creative Questions:**

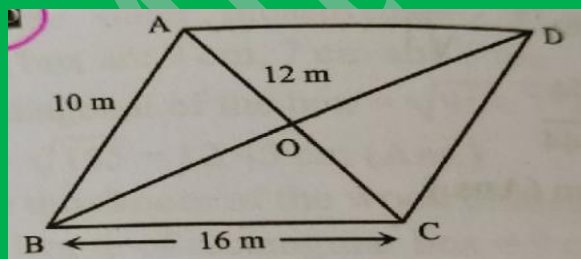
1. The ratio of sides of a triangle is 4 : 5 : 7 and its perimeter is 64 cm. The perimeter of a parallelogram is equal to the perimeter of the triangle. The length of one of the adjacent sides of the parallelogram is 12 cm and the length of a diagonal is 28 cm. [D.B.- 20]

- The area of the surface of a cube is 600 square cm. Determine the length of the side of the cube.
- Find the area of the triangle.
- Find the length of the other diagonal of the parallelogram.

2. Area of a rhombus is 1344 square cm and volume of a right circular cylinder is 2262 cubic cm. [R.B.- 20]

- The area of an equilateral triangle is  $36\sqrt{3}$  square cm. Find the length of the side of the of the triangle.
- If the greater diagonal of the rhombus is 56 cm. Find its perimeter.
- If the height of the cylinder is 20 cm then find the area of its whole surface.

3.

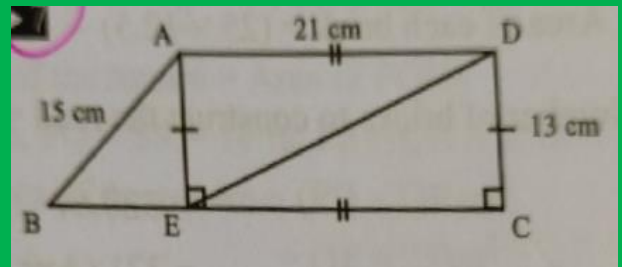


In the figure ABCD is a parallelogram and AC is a smaller diagonal. [C.B.- 20]

- The lengths of the two sides of the triangle are 8 cm and 9 cm respectively and the angle included between them is  $45^\circ$ . Find the area.
- Find the length of the other diagonal BD.

c) Find the area of the rhombus which length of each side and smaller diagonals are respectively equal to the largest length and smaller diagonal of the parallelogram in the light of the stem.

4.



[Ctg.B.- 20]

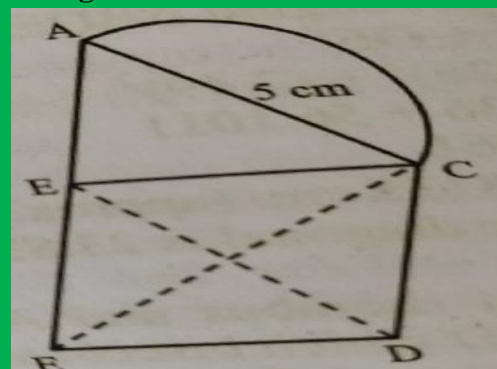
- Determine the area of  $\triangle DCE$ .
- Determine the area of trapezium ABCD.
- To construct a road of 1.5 metres wide around outside of the region AECD then determine the number of bricks of which the area of each brick is  $25 \times 12.5$  square centimeter.

5. (i) The area equilateral triangle is increases by  $7\sqrt{3}$  square metres when the length of each side of the triangle increased by 4 metres.

(ii) The inner and outer diameter of an iron pipe is 14 cm and 16 cm respectively and the pipes height is 4 metre. [S.B.- 20]

- The area of the whole surface of a cube is  $24 \text{ m}^2$ . Determine the length of diagonal of each surface.
- Find the area of the equilateral triangle.
- Find the weight of the iron pipe where weight of  $1 \text{ cm}^3$  iron is 7.2 gm.

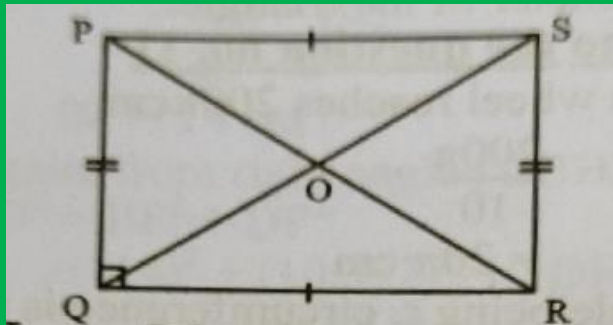
6. (i) In figure ABC is an equilateral triangle and BCDE is rhombus.



(ii) The inner and outer diameter of an iron pipe is 18 cm and 20 cm respectively and the height of the pipe is 5 metre. Weight of 7.2 gm iron = 1 cm<sup>3</sup>. [J.B.- 20]

- Find the area of circular segment of ABC.
- If BD = 6 cm then determine the area of rhombus BCDE.
- Find the weight of the iron pipe.

7.



In the figure  $PQ = SR = 16$  metre and  $PS = QR = 25$  metre. [B.B.- 20]

- Find the value of OP.
- There is a road inside around a square having 2.5 metre breadth where the area of the square is equal to the area of PQRS. Determine the area of the road.
- Find the area of whole surface and the volume of the solid formed by revolving the quadrilateral PQRS around its greater side.

8. Area of a rectangular region is 540 square cm. If its length decreases 7 cm then it becomes a square. Length of an isosceles triangle is 36 cm whose area is equal to the area of the rectangular region. [D.B.- 19]

- If a wheel makes 10 revolutions to cover  $200\pi$  cm distance then finds the radius of the wheel.
- Determine the length of the rectangular region.
- Determine the perimeter of the triangle.

9. The ratio of three sides of a triangle is 4 : 5 : 7 and perimeter is 64 cm. One adjacent side is 12 cm and a diagonal are 28 cm of a parallelogram whose

perimeter is equal to the perimeter of the triangle. [R.B.- 19]

- If the radius of base is 6 cm and volume is  $180\pi$  cubic centimeter of a cylindrical rod then determines the height of the rod.
- Determine the area of the triangle.
- Determine the length of another diagonal of the parallelogram.

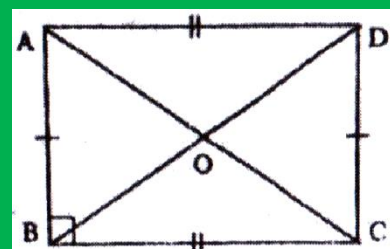
10. The lengths of two parallel sides of a trapezium are 56 cm and 86 cm. The inner and outer diameter of an iron pipe is 10 cm and 13 cm respectively and height is 6 metre. [Dj.B.- 19]

- Find the area of an outer curved surface of the pipe.
- Find the weight of the iron pipe where weight of 1 cm<sup>3</sup> iron is 7.2 gm.
- Determine the area of the trapezium where the length of two other sides are 13 cm and 19 cm.

11. The lengths of two parallel sides of a trapezium are 56 cm and 86 cm. The inner and outer diameter of an iron pipe is 10 cm and 13 cm respectively. [J.B.- 19]

- Find the area of an outer curved surface of the pipe.
- Find the weight of the iron pipe where weight of 1 cm<sup>3</sup> iron is 7.2 gm.
- Determine the area of the trapezium where the lengths of two other sides are 13 cm and 19 cm respectively.

12.



In the figure  $AB = 9$  metre and  $BC = 16$  metre. [C.B.- 19]

- Find the length of OB.
- There is a road outside around a square having 2 metre breadth where the area of the square is equal to the area of ABCD. Determine the area of the road.

- c) If the perimeter of an equilateral is  $\frac{3}{5}$  part of the perimeter of ABCD then determine the length of a median of the triangle.

13. The perimeter of a square region is equal to the perimeter of a rectangular region. The length of the rectangular region is thrice of its breadth and the area is 972 square metre. There is a path of  $\frac{3}{2}$  in width around outside of the rectangle.

[All B.- 18]

- a) Express the perimeter of the rectangle through x variable.  
b) Determine the area of square region.  
c) If the surface of each brick is  $0.25 \times 0.125 \text{ m}^2$  and the value of each brick is Tk. 15 then determine the cost to construct the path.

14. The lengths of two parallel sides of a trapezium are 61 cm and 41 cm and the lengths of two other sides are 25 cm and 15 cm respectively. [R.B.- 17]

- a) Draw the figure of the trapezium with above phenomena and find its perimeter.  
b) Find out the area and the length of two diagonal of the rectangle whose adjacent sides are formed by the parallel sides of the trapezium.  
c) Find out the area of the trapezium.

15. ABCD be a parallelogram. The length of two sides are 12 cm and 8 cm. The length of the smallest diagonal is 10 cm. [J.B.- 17]

- a) Draw the figure with short description.  
b) Find the length of the height of parallelogram.  
c) Find the length of other diagonal and the area of parallelogram.

16. The length of the smallest diagonal of a parallelogram having the sides of 12 metre and 8 metre is 10 metre.

[B.B.- 17]

- a) Draw the figure with brief description.  
b) Find the length of the other diagonal.  
c) Let the area of the parallelogram be equal to the area of a square and find the length of the sides of the square.

17. There is a garden whose length and breadth respectively are 60 metre and 40 metre in front of Ovi's house. A pond with around border of equal width is dug inside the garden whose area is  $\frac{1}{3}$  of that of the garden. The perimeter of the pond is equal to the perimeter of a square. [J.B.- 16]

- a) What is the area of the garden in acre?  
b) Find the length and breadth of the pond.  
c) How many stones will be required to cover the square region with square stones 50 cm each?

18. Area of a rectangular garden is 2000 square metre. If the length is reduced by 10 metre it becomes a square garden. [Dj.B.- 16]

- a) Let the length x metre and breadth y metre of a rectangular garden. Express the given information in terms of equation.  
b) Determine the length and the breadth of a rectangular garden.  
c) If the perimeter of a rectangular garden is equal to the perimeter of a rhombus and the smaller diagonal is 54 metre of a rhombus then find the other diagonal and the area of rhombus.