## STANDARD 8TH: CHAPTER 15
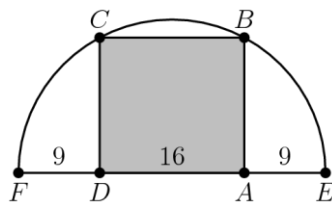
Area

Q.1 Choose the correct alternative

1. The ratio between the length and breadth of a rectangular park is 3:2. If the man cycling along the boundary of the park at the speed of 12km/hr completes one round in 8 minutes, then the area of the park is_____.
    a. 15360 sq. m.
    b. 30720 sq. m.
    c. 153600 sq. m.
    d. 307200 sq. m.

2. Find the radius of a circle if 2 m is the area of the circle.
    a. $\sqrt{0.83}$ m
    b. $\sqrt{0.63}$ m
    c. 5 m
    d. $\sqrt{38}$ m

3. A trapezium has an area of 72 square inches. The height is 6 inches, and one base measure 8 inches. Find the length of the other base.
    a. 16 inches
    b. 14 inches
    c. 15 inches
    d. 13 inches

4. Area of the largest triangle that can be inscribed in a semi-circle of radius r units, in square units is:
    a. r^2
    b. $\frac{1}{2r^2}$
    c. $2r^2$
    d. $\sqrt{2}r^2$

5. It is proposed to build a single circular park equal in area to the sum of areas of two circular parks of diameters 16 m and 12 m in a locality. The radius of the new park would be_____.
   a. 24m
   b. 10m
   c. 20m
   d. 30m

6. The area of a parallelogram is 120 square meters, and its height is 15 meters. Find the length of its base.
   a. 7m
   b. 6m
   c. 12m
   d. 8m

7. The Math Team designed a logo shaped like a multiplication symbol, shown below on a grid of 1-inch squares. What is the area of the logo in square inches?
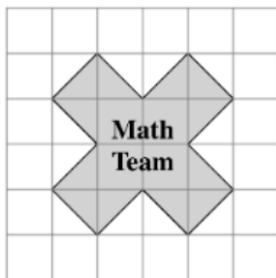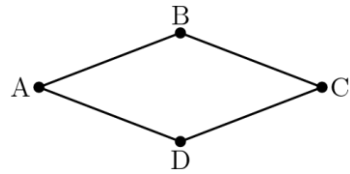

   a. 10
   b. 20
   c. 15
   d. 18

8. Rectangle $ABCD$ is inscribed in a semicircle with diameter FE as shown in the figure. Let $DA = 16$ and let $FD = AE = 9.$ What is the area of $ABCD$?

   a. 248
   b. 256
   c. 240
   d. 272

9. Quadrilateral $ABCD$ is a rhombus with perimeter 52 meters. The length of diagonal $\overline{AC}$ is 24 meters. What is the area in square meters of rhombus $ABCD$?


   a. 60
   b. 90
   c. 105
   d. 120

10. In the diagram below, a diameter of each of the two smaller circles is a radius of the larger circle. If the two smaller circles have a combined area of 1 square unit, then what is the area of the shaded region, in square units.
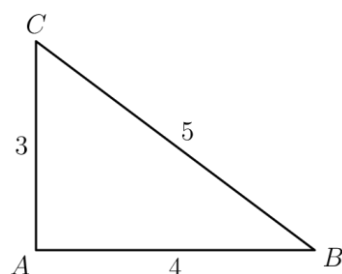
   a. $\frac{1}{4}$
   b. $\frac{1}{2}$
   c. 1
   d. $\frac{\pi}{2}$

Q.2 Solve the following

1. Point E is the midpoint of side $\overline{CD}$ in square $ABCD$, and $\overline{BE}$ meets diagonal $\overline{AC}$ at F. The area of quadrilateral $AFED$ is 45. What is the area of $ABCD$?
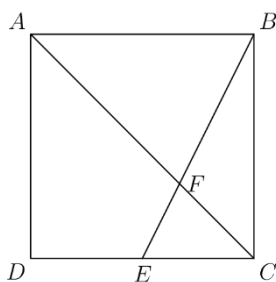

2. In the figure below, choose point D on $\overline{BC}$ so that $\triangle ACD$ and $\triangle ABD$ have equal perimeters. What is the area of $\triangle ABD$?

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3. The base and altitude of a triangular ground is 300 meter and 630 meters respectively. What is its area in sq km?

4. The figure below is made up of a semicircle and 2 squares. The length of XY is 10 cm and the length of the larger square is 6 cm. Find the Area of the figure. Give your answer in terms of π.

X

6 cm

10 cm

Y
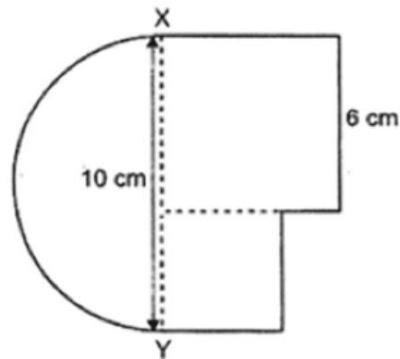
5. In rectangle $ABCD$, $AB = 6$ and $AD = 8$. Point M is the midpoint of $\overline{AD}$. What is the area of $\triangle AMC$?

D   C

M

4

A   6   B
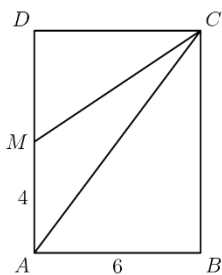
6. A semicircle is inscribed in an isosceles triangle with base 16 unit and height 15 unit so that the diameter of the semicircle is contained in the base of the triangle as shown. What is the radius of the semicircle?
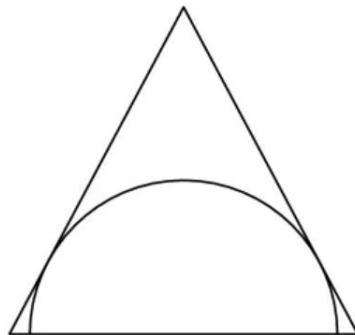
7. A towel when blenched have lost 20% of its length and 10% of its breadth. The percentage decrease in the area is_____.

8. The dimension of a room is 12.5m by 9m by 7m. There are 2 doors and 4 windows in the room. Each door measures 2.5m by 1.2m and each window 1.5m by 1m. Find the cost of painting the wall at Rs. 3.50 per sq m.

9. The Area of parallelogram is $338m^2$ and its height is twice the corresponding base, determine the base?

10. A piece of wire in the form of rectangle with dimension 12m by 10m Is bent to form a circle. Find the diameter of the circle.