**ASSESSMENT 3**

**MENSURATION**

TRIANGLE:

1. The sides of a triangle area in the ratio of and its perimeter is 94cm. Find the length of the smallest side of the triangle.
2. 18cm b)22.5cm c) 24cm d) 27cm
3. The height of a triangle is equal to the perimeter of a square whose diagonal is 9m and the base of the same triangle is equal to the side of the square whose area is 784. What is the area of the triangle? (in )
4. 504 b) 558 c) 478 d) 522
5. in ΔABC is an equilateral triangle of area 36 , then the area of the inscribed circle is
6. 48π b) 36 π c) 24 π d) 12 π
7. If each side of an equilateral triangle is increased by 2cm, area is increased by 3 . The length of its each side is
8. 2cm b) 2.5cm c) 3cm d) 3.5cm
9. The base of a triangle is 15cm and height is 12cm. the height if another triangle of double the area having the base 20cm is
10. 9cm b) 18cm c) 8cm d) 12.5cm

RECTANGLE:

1. The ratio of length and breadth of a rectangle is 5:3. If length is 8m more than breadth, find the area of the rectangle.
2. 300 sq cm b) 250 sq cm c) 240 sq cm d) 185 sq cm
3. The ratio between the length and the breadth of a rectangular plot is7:3, respectively. If the perimeter of the plot is 840m, then what is its length?
4. 245m b) 249m c) 294m d) 285m
5. The area of a rectangle is 360. Which is equal to 90% of the area of a square. What is the side of the square?
6. 20cm b) 15cm c) 40cm d) 25cm
7. The ratio of length and breadth of a rectangle is 5:2, respectively. The respective ratio of its perimeter and area is 1:3 (irrespective of the unit). What is the length of the rectangle?
8. 27 units b) 21 units c) 61 units d) 36 units
9. A rectangular field has its length and breadth in the ratio of 6:5, respectively. A man riding a bicycle, completes one lap of this field along its perimeter at the speed of 19.8km/hr in 2mins.what is the area of the field?
10. 19200 sq m b) 27000 sq m c) 32500 sq m d) 37000 sq m

SQUARE:

1. What would be the measure of the diagonal of a square whose area is equal to 882 ?
2. 38cm b) 32cm c) 42cm d) 48cm
3. What would be the area of a square whose diagonal measures 28?
4. 288 b) 514 c) 428 d) 392
5. If the ratio of areas of two squares is 225:256, then the ratio of their perimeters is:
6. 225:256 b) 256:225 c) 15:16 d) 16:15
7. If each side of a square is increased by 50%, the ratio of the area of the resulting square to that of the given square is:
8. 4:5 b) 5:4 c) 4:9 d) 9:4
9. If the area of a square increases by 69%, then the side of the square increases by:
10. 13% b) 30% c) 39% d) 69%

CIRCLE:

1. What would be the area of the circle whose circumference is 35.2cm?
2. 67.22 sq.cm b) 75.54 sq.cm c) 98.56 sq.cm d) 86.75 sq.cm
3. The diameter of a circle is 7.7cm. what is the circumference of the circle?
4. 26.4cm b) 24.2cm c) 28.4cm d) 22.2cm
5. The radius of a circle is reduced by 50%, by what percent does its area gets reduced?
6. 25 b) 50 c) 65 d) 75
7. A wheel makes 4000 revolutions in moving a distance of 44km. find the radius of the wheel.
8. 15m b) 27m c) 25m d) None of these
9. The inner circumference of a circular race track 7m wide is 440m. find the radius of the outer circle.
10. 57m b) 68m c) 77m d) 69m

**3-DIMENSION FIGURES**

**CUBE:**

1. If the volume of two cubes are in the ratio 27:1, the ratio of their edges is:
2. 1:3 b) 1:27 c) 3:1 d) 27:1
3. The volumes of two cubes are in the ratio 8:27. The ratio of their surface areas is:
4. 2:3 b) 4:9 c) 12:9 d) none of these
5. If each edge of a cube is doubled, then its volume:
6. Is doubled b) becomes 4 times c) becomes 6 times d) becomes 8 times
7. How many cubes of 3cm edge can be cut out of a cube of 18cm edge?
8. 36 b) 216 c) 218 d) 432
9. Three cubes of iron whose edges are 6cm, 8cm and 10cm respectively are melted and formed into a single cube. The edge of the new cube formed is:
10. 12cm b) 14cm c) 16cm d) 18cm
11. If the volume of a cube is 729 cm3, then the surface area of the cube will be:

a) 456 cm2  b) 466 cm2 c) 476 cm2 d) 486 cm2

1. The cost of painting the whole surface area of the cube at the rate of 13 paise per sq.cm is Rs.343.98. then the volume of the cube is:

a) 8500 cm3 b) 9000 cm3 c) 9250 cm3 d) 9261 cm3

**CYLINDER:**

1. The volume of a right circular cylinder whose curved surface area is 2640 cm2 and circumference of its base is 66cm, is

a) 3465cm3 b) 7720 cm3  c) 13860 cm3 d) 55440 cm3

2. The height of a right circular cylinder is 14cm and its curved surface is 704 sq.cm. Then its volume is:

a) 1408 cm3 b) 2816 cm3 c) 5632 cm3 d) 9856 cm3

3. The ratio between the radius of the base and the height of a cylinder is 2:3. If its volume is 12936 cu.cm, the total surface area of the cylinder is:

a) 2587.2 cm2 b) 3080 cm2  c) 25872 cm2 d) 38808 cm2

4. The curved surface area of a cylinder pillar is 264 m2 and its volume is 924 m3.find the ratio of its diameter to its height.

a) 3:7 b) 7:3 c) 6:7 d) 7:6

5. The ratio of total surface area to lateral surface area of a cylinder whose radius is 20cm and height 60cm, is

a) 2:1 b) 3:2 c) 4:3 d) 5:3

**CUBOID:**

1. Find the surface area of a 10cm x 4cm x 3cm brick

a) 84 sq.cm b) 124 sq.cm c) 164 sq.cm d) 180 sq.cm

2. A boat having a length 3m and breadth 2m is floating on a lake. The boat sinks by 1cm when a man gets on it. The mass of the man is:

a) 12kg b) 60kg c) 72kg d) 96kg

3. the edge of a cuboid are in the ratio 1:2:3 and its surface area is 88cm2. The volume of the cuboid is

a) 24cm3 b) 48 cm3 c) 64 cm3  d) 120 cm3

4. find the volume and surface area of a cuboid 16m long, 14m broad and 7m high,

a) 1568 m3, 868 cm2 b) 1468 m3,868 cm2 c) 1568 m3,878 cm2 d) 2568 m3,868 cm2

5. The sum of the length, breadth and depth of the cuboid is 19 cm and its diagonal is

5cm. It surface area is:

a) 125cm2 b) 236 cm2 c) 361 cm2 d) 486 cm2

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| **Mensuration Formulas for 2-Dimensional Figures** | | |
| **Shape** | **Area** | **Perimeter** |
| Circle | πr² | 2 π r |
| Square | (side)² | 4 × side |
| Rectangle | length × breadth | 2 (length + breadth) |
| Scalene Triangle | √[s(s−a)(s−b)(s−c),  Where, s = (a+b+c)/2 | a+b+c (sum of sides) |
| Isosceles Triangle | ½ × base × height | 2a + b (sum of sides) |
| Equilateral Triangle | (√3/4) × (side)² | 3 × side |
| Right Angled Triangle | ½ × base × hypotenuse | A + B + hypotenuse, where the hypotenuse is √A²+B² |
| Parallelogram | base × height | 2(l+b) |
| Rhombus | ½ × diagonal1 × diagonal2 | 4 × side |
| Trapezium | ½ h(sum of parallel sides) | a+b+c+d (sum of all sides) |

| **Mensuration Formulas for 3-Dimensional Figures** | | | |
| --- | --- | --- | --- |
| **Shape** | **Area** | **Curved Surface Area (CSA)/  Lateral Surface Area (LSA)** | **Total Surface Area (TSA)** |
| Cone | (1/3) π r² h | π r l | πr (r + l) |
| Cube | (side)³ | 4 (side)² | 6 (side)² |
| Cuboid | length × breadth × height | 2 height (length + breadth) | 2 (lb +bh +hl) |
| Cylinder | π r² h | 2π r h | 2πrh + 2πr² |
| Hemisphere | (2/3) π r³ | 2 π r² | 3 π r² |
| Sphere | 4/3πr³ | 4πr² | 4πr² |