

**CLASS -IX**  
**MATHEMATICS ,**  
**STANDARD WORKSHEET**  
**CHAPTER: SURFACE AREA**

**Choose the correct option.**

1. Find the curved surface area of the cylinder whose circumference of the base is 22 cm and height is 3m:  
(a)  $44\text{cm}^2$   
(b)  $66\text{ cm}^2$   
(c)  $77\text{cm}^2$   
(d)  $22\text{cm}^2$
2. What will be the diameter of a sphere whose surface area is  $55.44\text{m}^2$ ?  
(a) 4.6 m  
(b) 4.2m  
(c) 3.4m  
(d) 2.4m
3. The surface area of a cuboid is 1372 square centimetre. If its dimensions are in the ratio 4:2:1, then the length is:  
(a) 7 cm  
(b) 14 cm  
(c) 21 cm  
(d) 28cm
4. Total surface area of a cone whose radius as  $p/2$  and slant height as  $2l$  is:  
(a)  $2\pi p(l + p)$   
(b)  $\pi p(1 + \frac{p}{4})$   
(c)  $\pi p(1+p)$   
(d)  $2\pi pl$
5. Two cubes each of edge 12 cm are joined. The surface area of new cuboid is  
(a)  $140\text{ cm}^2$   
(b)  $1440\text{ cm}^2$   
(c)  $144\text{ cm}^2$   
(d)  $72\text{ cm}^2$

**Fill in The Blanks**

6. The difference between the total surface area and lateral surface area of a cube of side 4cm is -----.
7. If the slant height of a cone 12cm and radius of the base is 14 cm, then the total surface area is -----.
8. The curved surface area of a cylinder of height 14 cm is  $88\text{ cm}^2$ . The diameter of its circular base is:-----
9. A solid right circular cone is cut into two parts at the middle of its height by a plane parallel to its base. The ratio of the volume of the smaller cone to the whole cone is:-----
10. The curved surface area of a sphere of radius 7 cm is:-----

### **Answer The Followings:**

11. If the lateral surface of a cylinder is 94.2 sq.cm and its height is 5 cm, then find radius of its base.
12. The surface area of a cuboid is 1372 sq. cm. If its dimensions are in the ratio of 4 : 2 : 1, then find its length.
13. The radius of a spherical balloon increases from 7 cm to 14 cm when air is being pumped into it. Then find the ratio of surface area of the balloon in the two cases.
14. Find the total surface area of a hemisphere of radius  $\frac{r}{2}$  unit.
15. The slant height of a cone is 26 cm and base diameter is 20 cm. Find its height.

### **Short answer Type -I Questions**

16. The areas of three adjacent faces of a cuboid are x, y and z. Find the total surface area of the cuboid.
17. If each side of a cube is increased by 10%. What is the percentage increase in surface area of the cube?
18. The radius and height of a cone are in the ratio 4:3. The area of the base is 154 cm<sup>2</sup>. Find the curved surface area.
19. There are two cones, the curved surface area of one cone is twice that of the other. The slant height of later is twice that of the former. Find the ratio of their radii.
20. In a hot water heating system there is a cylindrical pipe of length 28 m and diameter 5 cm. Find the total radiating surface area in the system.

### **Short answer Type -II Questions**

21. The length of a hall is 20 m and breadth is 16 m. The sum of areas of the floor and the top is equal to the sum of the areas of the four walls. Find the height of the wall.
22. The ratio of total surface area and curved surface area of a cylinder is 2:1, if the total surface area is 616 cm<sup>2</sup>, find the radius and height of the cylinder.
23. A well of 14m deep is having 2m in radius. Find the cost of cementing the inner curved surface area at the rate of Rs. 2 per m<sup>2</sup>.
24. A right circular cylinder just encloses a sphere of radius 10 cm. Find the surface area of cylinder.
25. A cylinder, a cone and a sphere are of the same radius and same height. Find the ratio of their curved surface.

### **Long answer Type Questions**

26. The difference between outside and inside surface of a cylindrical metallic pipe 14m long is 44 cm<sup>2</sup>. If the sum of the diameters of the inner and outer surface of the cylinder is 9 cm, find the inner and outer radii of the cylinder.
27. A class room is 7m long, 6.5 m wide and 4m high. It has one door of 3m × 1.4 m and three windows of measure 2m × 1m. The internal walls are to be colour

washed. The contractor charges Rs.5.52 per square meter. Find the cost of colour washing.

28. The diameter of a roller is 250 cm and length is 140 cm. If it takes 500 complete revolutions to level a play-ground, determine the cost of levelling at the rate of 50 paise per square meter.

29 The internal and external diameters of hollow hemispherical vessel are 24 cm and 25 cm respectively. If the cost of painting  $1\text{cm}^2$  surface area is Rs. 1.5, find the total cost of painting the vessel all over.

30 The surface area of a sphere of radius 5 cm is five times the area of the curved surface area of a cone of radius 4cm. Find the height of the cone.

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