Chapter - 13

Surface Area and Volumes

1. A cube has a total surface area of 96 cm^2. What is the length of each side of the cube?

   a) 2 cm

   b) 3 cm

   c) 4 cm

   d) 6 cm

   Answer: c) 4 cm

2. The total surface area of a cuboid is 252 cm^2. If its length, breadth, and height are in the ratio 3:2:1, what is its volume?

   a) 54 cm^3

   b) 63 cm^3

   c) 72 cm^3

   d) 81 cm^3

   Answer: a) 54 cm^3

3. The ratio of the curved surface area to the total surface area of a right circular cylinder is:

   a) π:2

   b) 2:π

   c) 1:2π

   d) 2π:1

Answer: c) 1:2π

4. The radius of a cylinder is 7 cm and its height is 14 cm. What is its volume?

a) 1078 cm^3

b) 1504 cm^3

c) 2156 cm^3

d) 3008 cm^3

Answer: a) 1078 cm^3

5. The lateral surface area of a cone is 132 cm^2. If the slant height of the cone is 12 cm, what is the radius of the base?

a) 3 cm

b) 4 cm

c) 6 cm

d) 9 cm

Answer: a) 3 cm

6. The total surface area of a hemisphere is 154 cm^2. What is its curved surface area?

a) 77 cm^2

b) 99 cm^2

c) 110 cm^2

d) 154 cm^2

Answer: a) 77 cm^2

7. The volume of a sphere is 113.04 cm^3. What is its radius?

a) 2 cm

b) 3 cm

c) 4 cm

d) 5 cm

Answer: b) 3 cm

8. The slant height of a cone is 15 cm, and the radius of its base is 12 cm. What is its total surface area?

a) 720 cm^2

b) 810 cm^2

c) 900 cm^2

d) 1080 cm^2

Answer: d) 1080 cm^2

9. The ratio of the volumes of two spheres is 8:27. What is the ratio of their radii?

a) 2:3

b) 3:2

c) 2:9

d) 9:2

Answer: a) 2:3

10. The surface area of a hemisphere is 5544 cm^2. What is its volume?

a) 4158 cm^3

b) 8316 cm^3

c) 11088 cm^3

d) 16632 cm^3

Answer: b) 8316 cm^3

11. The lateral surface area of a cube is 150 cm^2. What is the length of each side of the cube?

a) 5 cm

b) 10 cm

c) 15 cm

d) 25 cm

Answer: a) 5 cm

12. The total surface area of a cuboid is 480 cm^2. If its length, breadth, and height are in the ratio 4:3:2, what is its volume?

a) 160 cm^3

b) 240 cm^3

c) 320 cm^3

d) 480 cm^3

Answer: b) 240 cm^3

13. The ratio of the curved surface area to the total surface area of a cone is:

a) π:2

b) 2:π

c) 1:3

d) 3:1

Answer: b) 2:π

14. The radius of a cylinder is 6 cm and its height is 10 cm. What is its volume?

a) 360 cm^3

b) 720 cm^3

c) 1200 cm^3

d) 1440 cm^3

Answer: c) 1200 cm^3

15. The lateral surface area of a cone is 132 cm^2. If the slant height of the cone is 15 cm, what is the radius of the base?

a) 4 cm

b) 6 cm

c) 9 cm

d) 12 cm

Answer: b) 6 cm

16. The total surface area of a hemisphere is 1848 cm^2. What is its curved surface area?

a) 924 cm^2

b) 1232 cm^2

c) 1386 cm^2

d) 1848 cm^2

Answer: a) 924 cm^2

17. The volume of a sphere is 13824 cm^3. What is its radius?

a) 12 cm

b) 16 cm

c) 18 cm

d) 24 cm

Answer: c) 18 cm

18. The slant height of a cone is 10 cm, and the radius of its base is 8 cm. What is its total surface area?

a) 288 cm^2

b) 320 cm^2

c) 400 cm^2

d) 480 cm^2

Answer: d) 480 cm^2

19. The ratio of the volumes of two spheres is 27:64. What is the ratio of their radii?

a) 3:4

b) 4:3

c) 9:16

d) 16:9

Answer: b) 4:3

20. The surface area of a hemisphere is 792 cm^2. What is its volume?

a) 3168 cm^3

b) 3960 cm^3

c) 5280 cm^3

d) 7920 cm^3

Answer: a) 3168 cm^3

21. The lateral surface area of a cube is 216 cm^2. What is the length of each side of the cube?

a) 4 cm

b) 6 cm

c) 8 cm

d) 12 cm

Answer: b) 6 cm

22. The total surface area of a cuboid is 800 cm^2. If its length, breadth, and height are in the ratio 5:4:3, what is its volume?

a) 200 cm^3

b) 300 cm^3

c) 400 cm^3

d) 500 cm^3

Answer: c) 400 cm^3

23. The ratio of the curved surface area to the total surface area of a cone is:

a) π:3

b) 3:π

c) 1:2

d) 2:1

Answer: b) 3:π

24. The radius of a cylinder is 10 cm and its height is 16 cm. What is its volume?

a) 1600 cm^3

b) 2560 cm^3

c) 3200 cm^3

d) 5120 cm^3

Answer: a) 1600 cm^3

25. The lateral surface area of a cone is 330 cm^2. If the slant height of the cone is 11 cm, what is the radius of the base?

a) 5 cm

b) 6 cm

c) 7 cm

d) 8 cm

Answer: c) 7 cm

26. The total surface area of a hemisphere is 308 cm^2. What is its curved surface area?

a) 154 cm^2

b) 176 cm^2

c) 220 cm^2

d) 308 cm^2

Answer: a) 154 cm^2

27. The volume of a sphere is 113.04 cm^3. What is its radius?

a) 2 cm

b) 3 cm

c) 4 cm

d) 5 cm

Answer: b) 3 cm

28. The slant height of a cone is 13 cm, and the radius of its base is 10 cm. What is its total surface area?

a) 530 cm^2

b) 600 cm^2

c) 780 cm^2

d) 910 cm^2

Answer: c) 780 cm^2

29. The ratio of the volumes of two spheres is 64:125. What is the ratio of their radii?

a) 4:5

b) 5:4

c) 8:15

d) 15:8

Answer: a) 4:5

30. The surface area of a hemisphere is 924 cm^2. What is its volume?

a) 308 cm^3

b) 616 cm^3

c) 1232 cm^3

d) 1848 cm^3

Answer: b) 616 cm^3

31. The volume of a sphere is 113.04 cm^3. What is its radius?

a) 2 cm

b) 3 cm

c) 4 cm

d) 5 cm

Answer: b) 3 cm

32. The slant height of a cone is 12 cm, and the radius of its base is 9 cm. What is its total surface area?

a) 500 cm^2

b) 600 cm^2

c) 700 cm^2

d) 800 cm^2

Answer: b) 600 cm^2

33. The ratio of the volumes of two spheres is 8:27. What is the ratio of their radii?

a) 2:3

b) 3:2

c) 2:9

d) 9:2

Answer: a) 2:3

34. The surface area of a hemisphere is 924 cm^2. What is its volume?

a) 308 cm^3

b) 616 cm^3

c) 924 cm^3

d) 1232 cm^3

Answer: b) 616 cm^3

35. The lateral surface area of a cube is 600 cm^2. What is the length of each side of the cube?

a) 5 cm

b) 6 cm

c) 7 cm

d) 8 cm

Answer: b) 6 cm

36. The total surface area of a cuboid is 900 cm^2. If its length, breadth, and height are in the ratio 3:2:1, what is its volume?

a) 120 cm^3

b) 180 cm^3

c) 240 cm^3

d) 300 cm^3

Answer: c) 240 cm^3

37. The ratio of the curved surface area to the total surface area of a cone is:

a) π:2

b) 2:π

c) 1:3

d) 3:1

Answer: b) 2:π

38. The radius of a cylinder is 8 cm and its height is 15 cm. What is its volume?

a) 240 cm^3

b) 900 cm^3

c) 1200 cm^3

d) 1800 cm^3

Answer: b) 900 cm^3

39. The lateral surface area of a cone is 176 cm^2. If the slant height of the cone is 8 cm, what is the radius of the base?

a) 4 cm

b) 5 cm

c) 6 cm

d) 7 cm

Answer: c) 6 cm

40. The total surface area of a hemisphere is 528 cm^2. What is its curved surface area?

a) 176 cm^2

b) 264 cm^2

c) 352 cm^2

d) 528 cm^2

Answer: b) 264 cm^2

41. The volume of a cone is 1232 cm^3. If the height of the cone is 14 cm, what is its radius?

a) 4 cm

b) 5 cm

c) 6 cm

d) 7 cm

Answer: a) 4 cm

42. The ratio of the volumes of two spheres is 1:8. What is the ratio of their surface areas?

a) 1:2

b) 2:1

c) 1:4

d) 4:1

Answer: c) 1:4

43. The total surface area of a cone is 220 cm^2. If the slant height of the cone is 10 cm, what is the radius of the base?

a) 4 cm

b) 5 cm

c) 6 cm

d) 7 cm

Answer: c) 6 cm

44. The volume of a hemisphere is 1470 cm^3. What is its curved surface area?

a) 441 cm^2

b) 539 cm^2

c) 693 cm^2

d) 924 cm^2

Answer: a) 441 cm^2

45. The total surface area of a cube is 294 cm^2. What is the length of each side of the cube?

a) 4 cm

b) 5 cm

c) 6 cm

d) 7 cm

Answer: c) 6 cm

46. The volume of a cylinder is 1256 cm^3. If the height of the cylinder is 14 cm, what is its radius?

a) 3 cm

b) 4 cm

c) 5 cm

d) 6 cm

Answer: b) 4 cm

47. The ratio of the curved surface area to the total surface area of a cone is:

a) π:2

b) 2:π

c) 1:3

d) 3:1

Answer: b) 2:π

48. The radius of a cylinder is 7 cm and its height is 20 cm. What is its volume?

a) 1540 cm^3

b) 3080 cm^3

c) 5390 cm^3

d) 6160 cm^3

Answer: d) 6160 cm^3

49. The lateral surface area of a cone is 308 cm^2. If the slant height of the cone is 14 cm, what is the radius of the base?

a) 4 cm

b) 5 cm

c) 6 cm

d) 7 cm

Answer: c) 6 cm

50. The total surface area of a hemisphere is 462 cm^2. What is its curved surface area?

a) 154 cm^2

b) 231 cm^2

c) 308 cm^2

d) 462 cm^2

Answer: a) 154 cm^2