MATHS

BOOKS - VGS PUBLICATION-BRILLIANT

SURFACE AREAS AND VOLUME

Exercise

1. Can we say that the Total Surface Area of Cuboid = Lateral Surface Area + 2 $\times$ Area of Base.

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2. Draw a figure of cuboid whose dimensions are l, b, h are equal. Derive the formula for LSA and TSA.

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3. The surface area of a cube of $4 \times 4 \times 4$ dimensions is painted. The cube is cut into 64

'equal cubes. How many cubes have : 1 face painted.?

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4. The surface area of a cube of $4 \times 4 \times 4$ dimensions is painted. The cube is cut into 64 'equal cubes. How many cubes have : 2 faces painted?

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5. The surface area of a cube of $4 \times 4 \times 4$ dimensions is painted. The cube is cut into 64 'equal cubes. How many cubes have :3 faces painted?

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6. The surface area of a cube of $4 \times 4 \times 4$ dimensions is painted. The cube is cut into 64 'equal cubes. How many cubes have : no face painted?

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7. Find the surface area of a cuboid whose length, breadth and height are 15cm,12cm and 10cm respectively.

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8. If each edge of a cube is doubled. How many times will its surface area increase?

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9. Two cubes each of edge 6 cm are joined face to face. Find the surface area of the cuboid thus formed.

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10. Find the cost of painting of the outer surface of a closed box which is 60 cm long 40 cm broad and 30 cm high at the rate of 50 paise per $20cm^2$.

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11. Find the side of a cube whose surface area is 600 cm^2.

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12. Prameela painted the outer surface of a cabinet of measures 1m $\times$ 2 m $\times$ 1.5m. Find the surface area she cover, if she painted all except the top and bottom of the cabinet?

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13. Find the cost of painting a cuboid of dimensions 20 cm $\times$ 15 cm $\times$ 12 cm at the rate of 5 paisa per square centi meter.

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14. Find the volume of a block of wood whose length is 20cm, breadth is 10 cm and height is 8 cm.

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15. A water tank is 1.4 m long, Im wide and 0.7m deep. Find the volume of the tank in litres.

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16. Arrange 64 unit cubes in as many ways as you can to form a cuboid. Find the surface area of each arrangement. Can solid cuboid of same volume have same surface area?

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17. Find the volume of a cuboid whose breadth is half of its length and height is double the length.

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18. A box is 1.8 m long, 90 cm wide, 60 cm height. Soap cakes of measurements 6 cm $\times$ 4.5 cm $\times$ 40 mm are to be packed in the box, so that no space is left.Find how many cakes can be packed in each box?

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19. How many cubes of side 3 cms each can be cut from wooden block in the form of a cuboid whose length, breadth and height are 21 cm, 9 cm and 8cm respectively.How much volume of wood is wasted ?

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20. Water is pouring into a cuboidal reservoir at the rate of 60 litres per minute. If the

volume of reservoir is 108 m^3. Find the number of hours it will take to fill the reservoir.

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21. A village has a population of 4000, requires 150 litres water per head per day. It has a tank measuring 20 m, 15 m, 6 m. How many days for the water is sufficient enough once the tank is made full ?

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22. What will happen to the volume of a cube if the length of its edge is reduced Is the volume get reduced ? If yes, how much?

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23. Find the volume of each of the cube whose sides are : 6.4 cm.

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24. Find the volume of each of the cube whose sides are : 1.3 m.

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25. Find the volume of each of the cube whose sides are : 1.6 m.

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26. How many bricks will be required to build a wall of 8 m long, 6 m height and 22.5 cm thick,

if each brick mea sures 25 cm by 11.25 cm by 6 cim ?

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27. A cuboid is 25 cm long, 15 cm breadth and 8 cm high. How much of its volume will differ from that of a cube with the edge of 16 cm?

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28. How many cubes of edge 4 cm, each can be cut out from cuboid whose length, breadth and height are 20 cm,18 cm and 16 cm respectively?

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29. How many cuboids of size 4 cm $\times$ 3 cm $\times$ 2 cm can be made from à cuboid ofsize 12 cm $\times$ 9 cm $\times$ 6 cm?

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30. A vessel in the shape of a cuboid is 30 cm long and 25 cm wide. What should be its height to hold 4.5 litres of water?

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31. L.S.A. of a cuboid is

A. $2h(l + b)$

B. $2(l + b)$

C. $2(lb + bh + th)$

D. $4a^2$

Answer:

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32. T.S.A. of a cube is

A. $4a_2$

B. $6a^2$

C. 2(lb + bh + lh)

D. 2h(l+ b).

Answer:

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33. The T.S.A. of a cuboid of measures 20 cm $\times$ 10 cm $\times$ 15 cm is (sq.cm)

A. 1300

B. 13000

C. 130

D. None

Answer:

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34. If the side of a cube is doubled then the change in its T.S.A. is

A. 1 time

B. 2 times

C. 3 times

D. 4 time

Answer:

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35. If s= 6 cm then T.S.A. of a cube (sq.cm)

A. 216

B. 260

C. 460

D. None

Answer:

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36. 1 cu.cm. =

A. $10mm^3$

B. $100mm^3$

C. $1000mm^3$

D. None

Answer:

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37. Volume of a cuboid (V) =_____

A. $\frac{lb}{h}$

B. lbh

C. S^3

D. $\frac{lh}{b}$

Answer:

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38. The volume of a water tank of mea suring 1.4 m $\times$ 1m $\times$ 0.7 m is (in Lts)

A. 98

B. 9.8

C. 980

D. 9800

Answer:

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39. Volume of a cube of side 's' is

A. $\frac{3a}{2}$

B. $\frac{a}{3}$

C. 3a

D. a^3

Answer:

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40. $1cm^3$ = _____ml

A. 1

B. 2

C. 3

D. 7

Answer:

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41. $1m^3$=_____ kilo litre

A. 6

B. 4

C. 1

D. 10

Answer:

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42. The volume of a wood measuring 20 cm $\times$ 10 cm $\times$ 8 cm is _____

A. 900

B. 1800

C. 1600

D. 1000

Answer:

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43. If V= Ibh then h =_____

A. $\frac{Vb}{1}$

B. $\frac{l}{vb}$

C. $\frac{lb}{v}$

D. $\frac{V}{lb}$

Answer:

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44. Number of formulae can be framed from the formula, V = lbh is _____

A. 3

B. 6

C. 4

D. 9

Answer:

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45. Express 1 litre in Cu Cm, 1 litre =__ Cu. Cm

A. 1000

B. 100

C. 10

D. 800

Answer:

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46. Find the volume of a cuboid whose breadth is half of its length and height is double the length.

A. l

B. 2l

C. 10l

D. None

Answer:

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47. A box is 1.8 m long, 90 cm wide, 60 cm height. Soap cakes of measurements 6 cm $\times$ 4.5 cm $\times$ 40 mm are to be packed in the box, so that no space is left.Find how many cakes can be packed in each box?

A. 1000

B. 2000

C. 9000

D. 8000

Answer:

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48. TSA of a cuboid is _____

A. 2h (l+b)

B. 2 (lb+bh + lh)

C. $2lb + 2l^2$

D. 2 (lb - bh) -1

Answer:

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49. The volume of a cube of edge 1 unit side is _____Cu. units.

A. 4

B. 3

C. 2

D. 1

Answer:

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50. Area of four walls of a room is ___

A. 2h (I + b).

B. 2 (l+ b)

C. 2 (l-b)

D. 2(a+b)

Answer:

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51. Write the number of faces of cube and cuboid.

A. 7

B. 8

C. 6

D. 9

Answer:

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52. The volume of a cube is 216 cm^3 then edge is ..... cm.

A. 22

B. 16

C. 9

D. 6

Answer:

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53. Diagonal of a cube is ..... units.

A. $a\sqrt{3}$

B. $\frac{\sqrt{3}}{a}$

C. 3a

D. $\frac{a}{\sqrt{3}}$

Answer:

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54. The measurements of a cuboid are 15m length, 12 m breadth and height is 5 m then its volume is _____ m^3

A. 600

B. 500

C. 1800

D. 900

Answer:

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55. The diagonal of a cube is $\sqrt{12}$ cm then Its'edge is _____cm

A. 6

B. 4

C. 9

D. 2

Answer:

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56. The volume of a cuboid with sides a, b and c is Vand its surface area iss then___

A. V = 2s (a + b +1)

B. $V = 2\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$

C. $\frac{1}{v} = \frac{s}{2}(b+c)$

D. $\frac{1}{v} = \frac{2}{s}\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$

Answer:

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57. If the edge of a cube is doubled then its volume increase by.....times

A. 9

B. 16

C. 8

D. 18

Answer:

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58. If acuboid with measurements $5m \times 6m \times 3m$is dug out than its volume is.... m^3

A. 90

B. 105

C. 165

D. 115

Answer:

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59. The base perimeter of a room is 34 m and its height is 10 n then the area of four walls of a room is _____m^3

A. 170

B. 220

C. 140

D. 340

Answer:

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60. The ratio between the LSA and area of base of a cuboid is _____

A. 0.043055555555556

B. 0.084027777777778

C. 0.16736111111111

D. 0.044444444444444

Answer:

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61. TSA of a cuboid is _____

A. 5

B. 6

C. 4

D. 10

Answer:

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62. Two cubes of 6cm edges are joined end to end then the volume of the resulting figüre ls _____ cm^3

A. 432

B. 430

C. 332

D. 440

Answer:

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63. Each face of a cube has a perimeter 32 cm then it's side is.....

A. 12

B. 11

C. 16

D. 8

Answer:

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64. s=5volume is _____ ___ cm^3

A. 635

B. 125

C. 256

D. 156

Answer:

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65. The edge of a cube is $6\sqrt{2}$cm then Its base area Is_____ cm^3

A. 79

B. 36

C. 70

D. 72

Answer:

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66. The measurements of a cuboid are 12m $\times$ 14m $\times$ 3.5m then its volume is ___ _____m^3

A. 288

B. 188

C. 588

D. 378

Answer:

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67. The measurements of a cubold 'are 8500 cm $\times$ 950 mm $\times$ 15 m then its V = _____ cu.m

A. 1312.51.

B. 1211.25

C. 1416.51

D. 1011.51

Answer:

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68. One cube is cut in 8 equal cubes of each 'edge 4 cm then the volume of that small cube, is_____

A. $125m^3$

B. $512m^3$

C. $160m^3$

D. None

Answer:

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69. Identify cuboidal shape from the following:

A. Brick

B. Book

C. Match box

D. All the above

Answer:

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70. A cube has edge 1.6 m then its V =_____m^3

A. 3.875

B. 4.96

C. 3.857

D. 4.096

Answer:

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71. The volume of a cube is 2197 cm^3 then Its a =_____ cm.

A. 0.04375

B. 2.3

C. 8.5

D. 6

Answer:

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72. Diagonal of a cube is ..... units.

A. $1 + \sqrt{2b}$

B. $\sqrt{1^2 + b^2 + h^2}$

C. $\sqrt{l - 2b}$

D. None

Answer:

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73. A cuboɬd will become a cube if _____

A. $< b <$ h

B. I $>$ 2b = h

C. l=b=h

D. 1=b $>$ h

Answer:

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74. How many bricks of measurements 20 cm $\times 5cm \times$ 6cm are required to built a wall with measurements $200cm \times 400cm \times 7.5$ cm?

A. 1000

B. 2400

C. 2000

D. 3400

Answer: