MATHS

BOOKS - UNITED BOOK HOUSE

Real life problem related to different solid objects

1. Multiple Choice Questions (MCQ) The number of spherical solids each 3cm. In radius

that can be cast from a solid iron cylinder od

diameter 12cm. And height 30cm. Is

A. 10

B. 20

C. 30

D. 35

Answer:

2. A sphere of greatest size is kept inside a cubical box. If the internal diamension of the box be a unit then the volume of the sphere is

A. 3/4cu.unit

B. $4\Pi a^3$ cu.unit

C. $\dfrac{\Pi a^3}{6}$ cu.unit

D. none of these.

Answer:

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3. If the radius of a cylinder and hemisphere is same and their height is also equal then the ratio of their volume is

A. 3 : 2

B. 2 : 3

C. 3 : 1

D. 2 : 1

Answer:

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4. The radius of a cylinder and a hemisphere is equal and their volumes are equal. The height of the hemisphere is greater than the height of the cylinder by.

A. 0.75

B. 0.5

C. 0.3

D. 0.25

Answer:

5. The ratio of volumes of a solid right circular cone, a solid sphere and a solid right circular cylinder each of whose radius and height are equal is

A. 3 : 4 : 1

B. 4 : 3 : 1

C. 3 : 1 : 4

D. 1 : 4 : 3.

Answer:

6. The curved surface of a cylinder and a sphere of equal diameter are equal. The ratio of their volume is

    A. 3 : 1

    B. 3 : 2

    C. 1 : 2

    D. 1 : 3.

Answer:

7. The ratio of the volume of a cone and a cylinder is 1 : 2 and the ratio of their heights is 2 : 1, then the ratio of their radius is

A. `sqrt2 : 1

B. 2 : 1

C. $\sqrt{3} : 2$

D. 1 : 3.

Answer:

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8. if the base and volume of a cone and a hemisphere are equal, then find the ratio of their heights.

A. 2 : 3

B. 3 : 2

C. 3 : 1

D. 2 : 1.

Answer:

9. The volume of a sphere is $\frac{4}{3}\Pi r^3$ cubic unit. The sphere is inscribed in a cube. The ratio of the volumes of the cube and the sphere is

A. $4 : \Pi$

B. $6 : \Pi$

C. $8 : \Pi$

D. none of these.

Answer:

10. A solid right circular cylinder of diameter 16cm. And height 2cm. Is made by melting 12 spheres of equal size. The diameter of each sphere is

   A. 4cm.

   B. 4.2cm.

   C. 4.5cm.

D. 4.8cm.

Answer:

11. The maximum volume of a cone that can be carved out of a solid hemisphere of radius r is___

A. $3\Pi r^2$

B. $\dfrac{\Pi r^3}{3}$

C. $\dfrac{\Pi r^2}{3}$

D. $3\Pi r^3$

Answer:

12. The material of a cone is converted into the shape of a cylinder of equal radius. If height of the cylinder is 5 cm, then height of the cone is____

A. 10 cm

B. 15 cm

C. 18 cm

D. 24 cm

Answer:

13. A solid sphere of radius r is melted and cast into the shape of a solid cone of height r, the radius of the base of the cone is____

A. 2r

B. 3r

C. 4r

D. none of these.

Answer:

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14. A cylindrical vessel 32 cm high and 18 cm as

the radius of the base, is filled with sand. This

bucket is emptied on the ground and a conical

heap of sand is formed. If the height of the conical heap is 24 cm, the radius of its base is____

A. 12 cm

B. 24 cm

C. 36 cm

D. 48 cm

Answer:

15. A solid is hemispherical at the bottom and conical above. If the surface areas of the two parts are equal, then the ratio of its radius and the height of its conical part is____

A. $1:1$

B. $1:3$

C. $\sqrt{3}:1$

D. $1:\sqrt{3}$

Answer:

16. A metallic sphere of radius 10.5 cm is melted and then recast into small cones, each of radius 3.5 cm and height 3 cm. The number of such cones is___

    A. 63

    B. 126

    C. 21

    D. 130

Answer:

17. Water flows at the rate of 10 m/min from a cylinderical pipe 5 mm in diameter. How long will it take to fill up a conical vessel whose diameter at the base is 40 cm and depth 24 cm ?

    A. 48 mins 15 sec

    B. 51 mins 12 sec

    C. 52 mins 1 sec

D. 55 mins

Answer:

18. A right trainlewith sides 3 cm, 4 cm and 5 cm is rotated about the side of 3 cm to form a cone. The volume of the cone so formed is___

A. $12\Pi cm^3$

B. $15\Pi cm^3$

C. $16\Pi cm^3$

D. $20\Pi cm^3$

Answer:

19. The volume of the greatest sphere that can be cutt off from a cylindrical log of wood of base radius 1 cm and height 5 cm is__

A. $\dfrac{4}{3}\Pi$

B. $\dfrac{10}{3}\Pi$

C. 5Π

D. $\dfrac{20}{3}\Pi$

Answer:

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20. A solid piece of iron of dimensions $49 \times 33 \times 24$ cm is moulded into a sphere. The radius of the sphere is___

A. 21 cm

B. 28 cm

C. 35 cm

D. none of these.

Answer:

21. A right circular cylinder of radius r and height h (h > 2r) just encloses a sphere of diameter___

A. h/2

B. r

C. 2r

D. 2h

Answer:

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22. The radii of the circular ends of a frustum are 6 cm and 14 cm. If its slant height is 10 cm, then its vertical height is___

A. 6 cm

B. 8 cm

C. 4 cm

D. 7 cm

Answer:

23. The height and radius of the cone of which the frustum is a part are h_1 and r_1 respectively. If h_2 and r_2 are the heights and

radius of the smaller base of the frustum respectively and h_2 : h_1 = 1 :2, then r_1 : r_2 is equal to__

A. 1 : 3

B. 1 : 2

C. 2 : 1

D. 3 : 1

Answer:

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24. If four times the sum of the areas of two circular faces of a cylinder of heigt 8 cm is equal to twice the curve surface area, the diameter of the cylinder is___

    A. 2 cm

    B. 4 cm

    C. 6 cm

    D. 8 cm

Answer:

25. If S_1 and S_2 be the surface area of a sphere and the curved surfae area of the circumscribed cylinder respectivel, then s_1 is equal to__

A. 3/4S_2

B. 1/2S_2

C. 2/3S_2

D. S_2

Answer:

26. A conical cap is filled with ice cream. The ice cream forms a hemi-spherical shape on its open top. The height of the hemispherical part is 7 cm, The radius of the hemispherical part equals the height of the come. Then the volume of ice-cream is____

    A. 1078 cu cm

    B. 1708 cu. Cm

    C. 7108 cu. Cm

D. 7180 cu. Cm

Answer:

27. A cone of height 15 cm and base diameter 30 cm is carved out of a wooden sphere of radius 15 cm. The percentage of wasted wood is___

A. 0.75

B. 0.5

C. 0.4

D. 0.25

Answer:

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28. A conical flask is full of water. The flask has base radius r and height h. This water is poured into a cylindrical flask of base radius m. The height of water in the cylindrical flask is__

A. m/2h

B. $\dfrac{h}{2}m^2$

C. 2h/m

D. `(h)/(3m^2)

Answer: