MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

MENSURATION

Example

1. Find the area of a triangle with sides 13 cm , 14 cm , and 15 cm .

Watch Video Solution

2. Find the area of a rhombus of perimeters 60 cm and one of its diagonals is 24 cm .

Watch Video Solution

3. Find the area of an equilateral triangle of side 8 cm .

Watch Video Solution

4. Find the area of an isosceles triangle of sides 10 cm , 10 cm , and 12 cm .

Watch Video Solution

5. The area of a right triangle is $28cm^2$. One of its perpendicular sides exceeds the other by 10 cm . Find the longest of the perpendicular sides .

Watch Video Solution

6. In the given figure, $ABCD$ is a rectangle; E and F are the mid-points of the sides BC and CD respectively. What is the ratio of the area of ΔAEF and that of ΔECF?

Watch Video Solution

7. A circular track runs around a circular park . If the difference between the circumference of the track and the park is 66 cm , then find the width of the track .

Watch Video Solution

8. From a rectangular metal sheet of length 11 cm and breadth 8 cm , three circular plates of radii 3 cm , 2 cm , and 1 cm are cut . The area of the remaining part is $\left(\text{in} cm^2\right)$ equal to the area of a circle , then the area of the circle is (in cm) _____.

Watch Video Solution

9. Find the area of a sector of a circle of angle 60° , the radius of the circle being 7 cm .

Watch Video Solution

10. The volume of a cuboid is $64cm^3$. The length ,breadth , and height have integral values in cm . Find the minimum possible lateral surface area of the cuboid if the breadth is not less than its height $\left(\text{ in} cm^2 \right)$.

Watch Video Solution

11. The dimensions of a cuboid are 15 cm $\times$ 12 cm $\times$ 10 cm . What is its total surface area ?

Watch Video Solution

12. Find the sum of the lengths of the edges of a prism whose base is an equilateral triangle of side 6 cm and height 8 cm .

Watch Video Solution

13. The base of a prism is a square of side 10 cm . Find the T.S.A of the prism , if height is 12 cm .

Watch Video Solution

14. Find the total surface area of a cube whose diagonal is of length $4\sqrt{3}$ cm .

Watch Video Solution

15. The radius of the base and the height of a cylinder are $14cm$ and $20cm$, respectively .What is the volume of the cylinder ?

A. $12380cm^3$

B. $12350cm^3$

C. $13220cm^3$

D. $12320cm^3$

Answer: D

Watch Video Solution

16. The radius of the base of a cone is 14 cm and its height is 48 cm . What is the curved surface area of the cone ?

Watch Video Solution

17. The cost of canvas required to make the conical tent of base radius 7 m, at the rate Rs.8 per m^2 is Rs.4400. Find the height of the tent

Watch Video Solution

18. A sphere of radius 3 cm is drawn into a wire of thickness of 0.5 cm . What is the length of the wire ?

Watch Video Solution

19. A conical cup when filled with ice - cream forms a hemispherical shape on its open end . Find the approximate volume of the ice - cream ,if the radius of the base of the cone is 3.5 cm and the vertical height of the cone is $7cm$.

A. $213cm^3$

B. $190cm^3$

C. $180cm^3$

D. $165cm^3$

Answer: C

Watch Video Solution

20. A solid metallic cone of diameters 32 cm and height 9 cm is melted and made into

identical spheres each of radius 2 cm . How many such spheres can be made ?

A. 32

B. 42

C. 72

D. 62

Answer: C

Watch Video Solution

21. Find the total surface area of a hemispherical bowl of radius 5 cm .

Watch Video Solution

22. The outer radius of a spherical container is 5 cm and the thickness of the container is 2 cm . Find the volume of the metal content of the shell .

Watch Video Solution

Test Your Concepts Very Short Answer Type Questions

1. 1. In a right angled triangle ABC, AB = AC. Thena:b:c is

Watch Video Solution

2. The area of an isosceles right - angled triangle is 72 cm^2 .Find its hypotenuse .

Watch Video Solution

3. The height of an equilateral triangle is $\sqrt{3}$ a units . Then , its side is _____ units .

Watch Video Solution

4. The ratio of the base and the height of a triangle is $3:2$ and its area is $108cm^2$ .Find the length of its base and its height .

Watch Video Solution

5. What is the length of the altitude of an equilateral triangle having 144 cm as its side ?

Watch Video Solution

6. Find the area of quadrilateral ABCD whose diagonal AC is 10 cm long and the lengths of perpendicular drawn from the vertices B and D on AC are 4 cm and 3 cm , respectively .

Watch Video Solution

7. The diagonal of a square is 'a' units .Then , the area of the square is _____ square units .

Watch Video Solution

8. A rectangular grassy plot of length 6 m and width 4 m has a gravel path of width 1 m all around it and inside . Find the cost of gravelling the path at 80 paise per m^2

Watch Video Solution

9. The area of a square field is $36m^2$. How long would it take for a bird to cross it diagonally flying at the rate of $30\sqrt{2}$ m/min ?

Watch Video Solution

10. If the perimeter of a rectangular is equal to the perimeter of a parallelogram , then the area of the rectangle is more than that of the parallelogram .

Watch Video Solution

11. The diameter of a semi -circle is 20 cm . What is the area of the semi - circular region in terms of π ?

Watch Video Solution

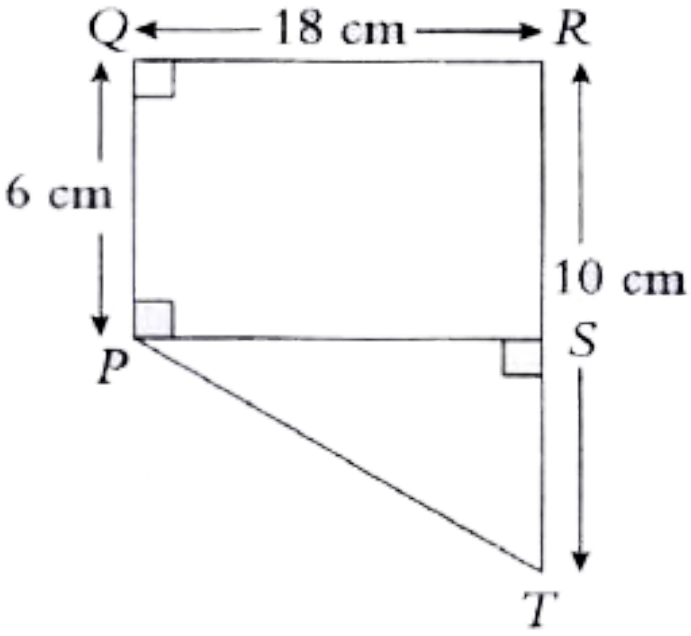
12. Find the volume of a rectangular box having a length of 5 m, width of 3 m , and height of 4 m .

Watch Video Solution

13. The area of a trapezium is $72cm^2$ and its height is 12 cm . If one of the parallel sides is longer than the other by 2 cm , then find the length of the two parallel sides .

Watch Video Solution

14. Find the area of the polygen PQRST given below .



Given, PQ = 6 cm , QR = 18 cm , and RT =10 cm .

$\angle PQR = \angle QPS = \angle PST = 90^\circ$

Watch Video Solution

15. A wire of length l units is bent to form a circle . The radius of the circle so formed is _____ units .

Watch Video Solution

16. The outer radius of a ring is (x + 2y) cm and the width is (x + y) cm. What is the area of the ring?

Watch Video Solution

17. The total surface area of a cone of radius 3 cm and height 4 cm is _____.

Watch Video Solution

18. Find the radius of a sphere whose surface area is 616 cm^2.

Watch Video Solution

19. The inner curved surface area of a hollow hemispherical bowl of external radius 14 cm and thickness 2 cm is _____.

Watch Video Solution

20. The sum of the lengths of the edges of an octagonal prism with base 4 cm and height 5 cm is

Watch Video Solution

21. The perimeter of a sector of angle 90° , whose radius is 44 cm , is _____.

Watch Video Solution

22. The area of the base of a right circular prism is $50cm^2$ and its height is 8 cm . What is its volume ?

Watch Video Solution

23. In a rectangle , the sum of the length and breadth is 'a' units . The perimeter of the rectangle is _____.

Watch Video Solution

24. The area of a parallelogram is 'x' sq.units . The base of the parallelogram is 'b' units, then the height of the parallelogram corresponding to side 'b' is _____ units .

Watch Video Solution

25. In a quadrilateral ABCD , AB = 5 cm , BC = 37 cm , CD = 35 cm , BD = 12 cm , and AD = 13 cm . Find its area .

View Text Solution

26. A verandah 15 m long and 12 m broad is to be paved with tiles each measuring 500 cm $\times$ 300 cm . Find the number of tiles needed .

A. 13

B. 17

C. 15

D. 12

Answer: D

Watch Video Solution

27. The perimeter of a semi -circular region is $144cm$. What is its area ?

A. $1222cm^2$

B. $1234cm^2$

C. $1122cm^2$

D. $1232cm^2$

Answer: D

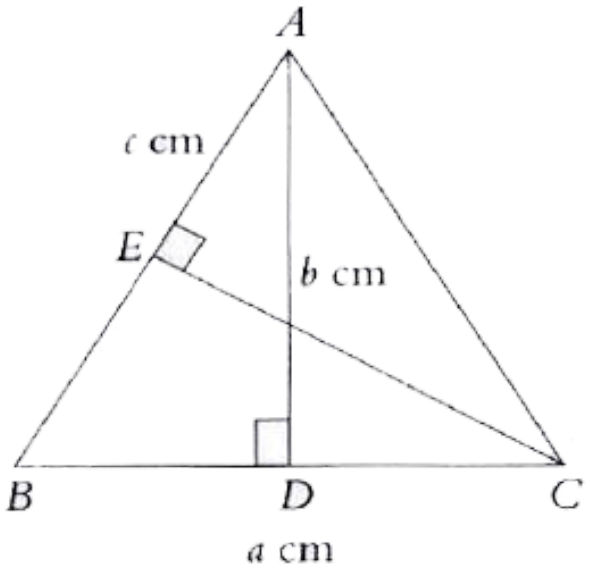
Watch Video Solution

28. A hall is 12 m long and 5 m wide . If the height of the hall is 10 m , then find the surface area of the walls of the hall .

Watch Video Solution

29. A spherical piece of metal of diameter 6 cm is drawn into a wire of 4 mm in diameter. Find the length of the wire.

 Watch Video Solution



30.

In the above figure , BC = a cm , AB = c cm , and

AD = b cm .Find EC.

View Text Solution

Test Your Concepts Short Answer Type Question

1. A spherical piece of metal of diameter 6 cm is drawn into a wire of 4 mm in diameter. Find the length of the wire.

Watch Video Solution

2. Find the area of a right triangle whose hypotenuse is 17 cm and one of the sides which forms a right angle is 8 cm .

Watch Video Solution

3. A cow is tied to a pole fixed at one corner of a square field of grass , whose side is 40 m . If the length of the rope with which the cow is tied is 14 m , then what is the area in which the cow can graze ?

Watch Video Solution

4. In a circular ground of radius 112 m , a racetrack is in the form of a ring . The width of the racetrack is in the form of a ring . The width of the racetrack is in the form of a ring .

The width of the racetrack is 14 cm . If the circumference of the circle and the outer ring of the racetrack are the same , then what is the area of the racetrack ?

View Text Solution

5. A cube of the edge length of 1 m is cut into small cubes of side 10 cm each , then how many such small cubes can be obtained ?

Watch Video Solution

6. What is the length of the longest needle that can be accommodated in a rectangular box , if its dimensions being 20 cm $\times$ 5 cm $\times$ 4 cm ?

Watch Video Solution

7. The outer and inner surfaces areas of a hemispherical bowl are $1152\pi cm^2$ and $648\pi cm^2$, respectively .What is the total surface area of the bowl ?

A. $2052\pi cm^2$

B. $2362\pi cm^2$

C. $2325\pi cm^2$

D. $2000\pi cm^2$

Answer: A

Watch Video Solution

8. The ratio of the volumes of two cubes is $729:1331$ .What is the ratio of their total surface areas?

Watch Video Solution

9. There is a playground measuring 50 m $\times$ 30 m . In one corner of the ground , a pit of dimensions 4 m $\times$ 3 m $\times$ 1 m is dug and the mud is spread all over the ground uniformly What is the approximate height of the layer of mud spread ?

Watch Video Solution

10. The radii of the base as well as the heights of a cone and a cylinder are each equal to h and the radius of a hemisphere is also equal to h . Find the ratio of the volume of cylinder , hemisphere , and cone .

Watch Video Solution

11. What is the length of a cuboid having breadth and height equal to 4 cm and 6 cm

respectively , and the total surface area of $148cm^2$?

Watch Video Solution

12. How many cubes having edge of 4 inches each can be cut from a cube having edge of 12 inches ?

Watch Video Solution

13. Find the area of a regular hexagon of side 6 cm .

Watch Video Solution

14. The volume of a sphere of diameter 42 cm is _____.

Watch Video Solution

15. A sector of central angle 120° and a radius of 21 cm were made into a cone . Find the height of the cone (in cm).

Watch Video Solution

Test Your Concepts Eassy Type Question

1. A conical tent is 48 m high and the diameter of its base is 28 m. The cost of the canvas

required to make the tent at the rate of Rs 50 per square metre is _____.

Watch Video Solution

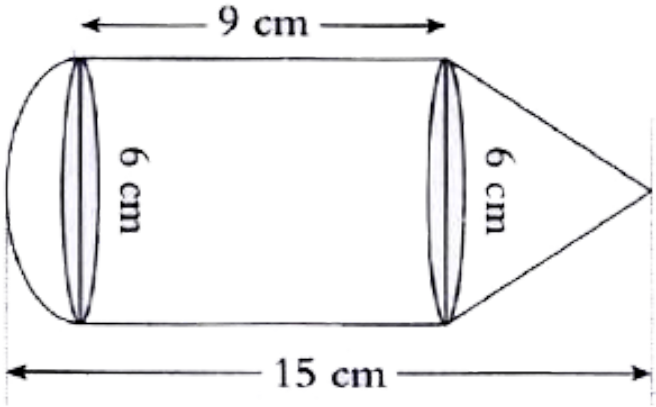
2. From a square metal sheet of side 5 cm , three circular plates of radii $\frac{1}{2}$cm , 1 cm , and $1\frac{1}{2}$ cm are cut . If the area of the remainning part is equal to the area of a circle , then the area of that circle $\left(\text{ in } cm^2 \right)$ is _____.

Watch Video Solution

3. In the figure given below, the area of the shaded region is $44cm^2$. O is the centre of the semi-circle, $\overline{OE} \perp \overline{OD}$ and $\overline{OC} \perp \overline{AB}$. The area of the region POQR (in cm^2) if $OE = 7cm$ is

Watch Video Solution

4.



In the above figure , a solid consisting of a cylinder surmounted by a cone at one end and a hemisphere at the other . Find the volume of the solid .

Watch Video Solution

5. A hollow sphere which has internal and exter-nal diameters as 14 cm and 16 cm respectively is melted and recast into a cone with a height of 16 cm. Find the diameter of the base.

Watch Video Solution

Concept Application Level 1

1. In a scalene triangle ,one side exceeds the other two sides by 4 cm and 5 cm , respectively , and the perimeter of the triangle is 36 cm .Find the area of the triangle in cm^2 .

A. 63

B. $9\sqrt{10}$

C. $18\sqrt{10}$

D. $12\sqrt{21}$

Answer: D

Watch Video Solution

Watch video solution

2. The numerical value of product of the sides of a triangle is 512 units . Find the minimum possible perimeter of the triangle (in units).

A. 18

B. 24

C. 30

D. 22

Answer: B

Watch Video Solution

3. Find the area of a square if the sum of the diagonals is 100 cm .

A. $100\sqrt{2}cm^2$

B. $1250cm^2$

C. $125cm^2$

D. $5000cm^2$

Answer: B

Watch Video Solution

4. Each side of a triangle is multiplied with the sum of the squares of the other two sides. The sum of all such possible results is 6 times the product of the sides. The triangle must be

A. Equilateral

B. Isosceles

C. Scalene

D. Right-angled

Answer: A

Watch Video Solution

5. A square and a rectangle each have a perimeter of $40m$. The difference between areas of the two figures is $9m2$. What are the possible dimensions of the rectangle?

A. 13 m , 7 m

B. 14 m , 6 m

C. 108 m , 1m

D. 15 m , 5 m

Answer: A

Watch Video Solution

6. There is a playground measuring 50 m $\times$ 30 m . In one corner of the ground , a pit of dimesions 5 m $\times$ 4 m $\times$ 1 m is dug and the mud is spread all over the ground uniformly . What is the approximate height of the layer of mud spread ?

A. 7 mm

B. 8 mm

C. 14 mm

D. 10 mm

Answer: C

Watch Video Solution

7. The area of a square is $225m^2$. The perimeter of the square is 10 m less than the perimeter of the rectangle and breadth of the

rectangle is 15 m. Find the area of the rectangle in m^2 .

A. 150

B. 350

C. 300

D. 75

Answer: C

Watch Video Solution

8. In a parallelogram ABCD , AB= 6 cm , BC = 5 cm , and AC= 7 cm . Find the perpendicular distance between $\overline{AB}$ and $\overline{CD}$.

A. $6\sqrt{6}$ cm

B. $12\sqrt{6}cm$

C. 5 cm

D. $2\sqrt{6}$ cm

Answer: D

Watch Video Solution

9. Two goats are tied to two adjacent corners of a square plot side 28 m with ropes each 14 m long . Find the area not grazed by the goats in the plot in m^2

A. 168

B. 476

C. 376

D. 238

Answer: B

Watch Video Solution

10. The circumference of a circle is equal to the sum of the perimeters of an equilateral triangle of side 12 cm and a square of diagonal $2\sqrt{2}$ cm . Find the area of the circle in cm^2

A. 44

B. 144

C. 154

D. 156

Answer: C

 Watch Video Solution

11. If the diameter of a circle is increased by 200 % , then by what per cent has its circumference increased ?

A. 1

B. 0.5

C. 2

D. 1.5

Answer: C

Watch Video Solution

12. A horse is tied to a pole fixed at one corner of a 14 m $\times$ 14 m square field of grass by means of a rope 7 m long . Find the area of the square field within which the horse can graze .

A. $77m^2$

B. $196m^2$

C. $28m^2$

D. $38.5m^2$

Answer: D

Watch Video Solution

13. The area of a ring is $16.94cm^2$ and the area of the outer circle is $55.44cm^2$ .Find the perimeter of the inner circle .

A. 22 cm

B. 26.4 cm

C. 38.5 cm

D. 29.04 cm

Answer: A

 Watch Video Solution

14. The sum of the radius of the base of a solid cylinder and the height of the cylinder is 15 cm . If the total surface area of the cylinder is $660cm^2$, then find the volume of the cylinder .

A. $1232cm^3$

B. $1256cm^3$

C. $1296cm^3$

D. $1276cm^3$

Answer: A

Watch Video Solution

15. If each edge of a cube is increased by 5 cm , then the lateral surface area of the cube increases by _____.

A. $100cm^2$

B. $150cm^2$

C. $50cm^2$

D. Cannot be determined

Answer: D

Watch Video Solution

16. The perimeter of a square and the circumferenceof a circle are equal. If the radius

of the circle isr and side of the square is S, then the area of thecircle in terms of S is

A. $4S^2$

B. $16S^2$

C. $\frac{4S^2}{\pi}$

D. $\frac{16S^2}{\pi}$

Answer: A

Watch Video Solution

17. The area (in cm^2) of a sector of a circle with an angle of 45° and radius 3 cm is

A. $4\frac{13}{14}$

B. $3\frac{6}{7}$

C. $3\frac{51}{56}$

D. $3\frac{15}{28}$

Answer: C

Watch Video Solution

18. In the figure below, O is the centre of the circleand OABC is a square. P and Q are the midpointsof OC and OA respectively. The area of the square(in cm^2), if the area of the shaded part is $38.5cm^2$ is

A. 49

B. 81

C. 144

D. 196

Answer: C

Watch Video Solution

19. Find the area $\left(\text{in} cm^2 \right)$ of a rhombus whose side is 17 cm and one of its diagonals is 30 cm .

A. 510

B. 600

C. 240

D. 350

Answer: C

Watch Video Solution

20. The areas of a square and a circle are equal. The radius of the circle is r and the side of the square is S.Find the circumference of the circle in terms of S.

A. S

B. 2S

C. 3S

D. 4S

Answer: A

Watch Video Solution

21. Find the area of a sector of a circle with an angle of 60° and radius 7 cm $\left(\text{ in } \text{cm}^2 \right)$

A. $7\frac{1}{3}$

B. $25\frac{2}{3}$

C. $22\frac{2}{3}$

D. $14\frac{1}{3}$

Answer: B

Watch Video Solution

22. Find the volume $\left(\text{ in } cm^3 \right)$ of a sphere which is exactly inserted inside a cube of side 6 cm .

A. $288\ \pi$

B. 144π

C. $64\sqrt{3}\pi$

D. 36π

Answer: D

Watch Video Solution

23. The volume of a cuboid is $3840cm^3$ and the length of the cuboid is $20cm$. If the ratio of its breadth and its height is $4:3$, then the total surface area of the cuboid is

A. $752cm^2$

B. $1442cm^2$

C. $1208cm^2$

D. $1504cm^2$

Answer: D

Watch Video Solution

24. The surface area of a sphere is $100\pi cm^2$.

Find its volume.

A. $\frac{200}{3}\pi cm^3$

B. $\frac{350}{3}\pi cm^3$

C. $\frac{500}{3}\pi cm^3$

D. $\frac{400}{3}\pi cm^3$

Answer: C

Watch Video Solution

25. The total surface area of a cuboid is $392cm^2$ and the length of the cuboid is 12 cm. If the ratio of its breadth and its height is $8:5$, then what is the volume of the cuboid?

A. $480cm^3$

B. $1920cm^3$

C. $3840cm^3$

D. $20cm^3$

Answer: A

Watch Video Solution

26. The area of the base of a right prism whose base is an equilateral triangle is $9\sqrt{3}cm^2$. If the height of the prism is 12 cm , then what is its lateral surface area ?

A. $212cm^2$

B. $21cm^2$

C. $216cm^2$

D. $222cm^2$

Answer: C

Watch Video Solution

27. In a rectangular field, the difference of two adjacent sides is 5 m and the length of

diagonal is 25 m.Then, find the cost of fencing it at the rate of Rs 4 per metre

A. Rs 360

B. Rs 140

C. Rs 280

D. Rs 200

Answer: C

Watch Video Solution

28. Find the area of an equilateral triangle whose height is $\sqrt{48}$ cm . The following steps are involved in solving the above problem . Arrange them in sequential order .

$\therefore$ Area of the equilateral triangle $= \frac{\sqrt{3}}{4} \times 64 = 16\sqrt{3}cm^2$

Let the side of the equilateral triangle be a cm

.

$\therefore$ Height of the equilateral triangle $= \frac{\sqrt{3}a}{2}$

$\therefore$ Area of an equilateral triangle whose side

is a cm = $\frac{\sqrt{3}}{4}a^2 = \frac{\sqrt{3}}{4} \times (8)^2 (\because a = 8cm)$

Given $\frac{\sqrt{3}a}{2} = \sqrt{48} \Rightarrow a = 8cm$

A. BDCA

B. ABCD

C. BDAC

D. DBCA

Answer: A

Watch Video Solution

29. Find the sum of the lengths of the edges of a prism whose base is a trianglee with sides 3 cm , 4 cm ,and 5 cm , and height 10 cm . The following steps are involved in solving the above problem . Arrange them in sequential order .

(A) The sum of the lengths of the edges of a prism = 2 (the perimeter of base) + number of sides of the base $\times$ the height of the prism

$= 24 + 3 \times 10$

(B) The perimeter of the base =$(3 + 4 + 5)$ cm = 12 cm and the number of sides of the base is

3 .

(C) $\therefore$ The sum of the lengths of the edges of a prien = $24 + 30 = 54$ cm .

A. ABC

B. ACB

C. BAC

D. BCA

Answer: C

View Text Solution

30. Volume of a cone is V cu. Cm and its base radius is r cm . Find its curved surface area .

The following steps are involved in solving the above problem . Arrangethem in order .

(A) The height of cone , h $= \frac{3V}{\pi r^2}$

(B) Volume of a cone , $\frac{1}{3}\pi r^2 h = V$ and base radius = r

(C) $\therefore$ Curved surface area of the cone = $\pi r l$

The slant height of the cone , $l = \sqrt{h^2 + r^2}$

A. ABDC

B. BADC

C. BCDA

D. BDAC

Answer: B

View Text Solution

Concept Application Level 2

1. A conical tent is 48 m high and the diameter of its base is 28 m . The cost of the convas

required to make the tent at the rate of Rs 50 per square metre is _____.

A. Rs $110,000$

B. Rs $105,600$

C. Rs $11,000$

D. Rs $127,400$

Answer: A

Watch Video Solution

2. The volume of a cube which can be insertedexactly in a sphere of radius $\frac{3}{2}\sqrt{3}cm$ is

A. $24cm^3$

B. $27cm^3$

C. $18cm^3$

D. $22cm^3$

Answer: B

Watch Video Solution

3. The cost of painting the total outside surface of a closed cylinder at Rs 3 per cm^2 is Rs 2772. If the height of the cylinder is 2 times the radius , then find its volume .

A. $34, 312cm^3$

B. $3342cm^3$

C. $2154cm^3$

D. $2156cm^3$

Answer: D

Watch Video Solution

4. If the base radius of a cone is doubled and its height is halved , then which of the following is true regarding its volume ?

A. Increases by 200 %

B. Decreases by 200 %

C. Increases by 100 %

D. Decreases by 100 %

Answer: A

Watch Video Solution

5. A metallic sphere of radius 12 cm is melted and cast into a cone whose base radius is 16 cm . What is the height of the cone ?

A. 27 cm

B. 18 cm

C. 90 cm

D. 270 cm

Answer: A

Watch Video Solution

6. A solid metallic cone of radius 10 cm and height $\frac{2}{5}m$ is melted and recast into a sphere. Find theradius of the sphere.

A. $10\sqrt{10}$cm

B. $(10)^{\frac{1}{3}}$ cm

C. 10 cm

D. 8 cm

Answer: C

Watch Video Solution

7. The width of a ring is 6 cm and the area of the inner circle is $616cm^2$. Find the circumference of the outer circle .

A. 88 cm

B. $\frac{880}{7}$ cm

C. $\frac{264}{7}$ cm

D. $\frac{8800}{7}$ cm

Answer: B

Watch Video Solution

8. What is the difference between the total surface area and curved surface area of a cylinder whose radius is equal to 10 cm ?

A. $200\pi cm^2$

B. $300\pi cm^2$

C. $100\pi cm^2$

D. $10\pi cm^2$

Answer: A

Watch Video Solution

9. A solid metal sphere is cut through its centre into two equal parts . Find the total surface area of each part if the radius of the sphere is 7 cm.

A. $462cm^2$

B. $231cm^2$

C. $308cm^2$

D. $115.5cm^2$

Answer: A

Watch Video Solution

10. The magnitude of surface area of sphere is half the magnitude of the volume of the sphere . Find the diameter of the sphere .

A. 3 units

B. 6 units

C. 12 units

D. 18 units

Answer: C

Watch Video Solution

11. A toy is in the shape of the cone over a hemisphere of radius 8 cm. If the total height of the toy is 14 cm, then what is the total surface area of the toy.

A. $\frac{2596}{7}cm^2$

B. $\frac{4576}{7}cm^2$

C. $\frac{2967}{7}cm^2$

D. $\frac{4567}{7} cm^2$

Answer: B

Watch Video Solution

12. A conical tent is 12 m high and the radius of its base is 9 m . What is the cost of canvas required to make the tent , if the cost of $1m^2$ canvas is Rs 14 ?

A. Rs 5940

B. Rs 4752

C. Rs 5840

D. Rs 4653

Answer: A

 Watch Video Solution

13. A metal cuboid of dimensions 49 m , 22 m , and 14 m is melted and cast into cubes such that the side of each cube is equal to the half

of the height of each cuboid . The number of cubes , thus , formed is _____.

A. 88

B. 44

C. 22

D. 110

Answer: B

Watch Video Solution

14. Area of a circular park is P m^2 .A path of width W m is laid around and outside the park . Find the area of the path .

The following steps are involved in solving the above problem . Arrange them in sequential order .

(A) Radius of the outer circle , $R = \sqrt{\frac{P}{\pi}} + W$

(B) Area of the park ,$\pi r^2 = P$

(C) Area of the path $= \pi R^2 - \pi r^2$

(D)Radius of the park , $r = \sqrt{\frac{P}{\pi}}$

(E) $\therefore$ Area of the path

$$= p\left(\sqrt{\frac{P}{\pi}} + W\right)^2 - P$$

A. BACDE

B. BADCE

C. BCADE

D. BDACE

Answer: D

View Text Solution

15. Area of rhombus is $96cm^2$ and one of its diagonals is 12 cm . Find the side of the rhombus .

The following steps are involved in solving the above problem . Arrange them in sequential order .

(A) Let PQRS be a rhombus ,PR = 12 cm , and the diagonals PR and QS intersect at T .

(B) Area of the rhombus = $\frac{1}{2} \times PR \times QR = 96$

(C) $\Rightarrow QS = 16cm$

(D) PTQ is a right triangle and

$PQ^2 = 6^2 + 8^2 \Rightarrow PQ = 10cm$.

(E) PT = $\frac{PR}{2} = 6cm$ and $QT = \frac{QS}{2} = 8$ cm

A. ABCDE

B. ABECD

C. ABCED

D. ACEBD

Answer: C

Watch Video Solution

16. Area of a trapezium is $1050cm^2$. One of its parallel sides is 50 cm and the distance betweeen the parallel sides is 30 cm . Find the length of the other parallel side (in cm) .

A. 24

B. 20

C. 15

D. 26

Answer: B

Watch Video Solution

Watch video solution

17. How many solid lead balls of diameter 4 cm each can be made from a solid lead ball of radius 8 cm ?

A. 64

B. 32

C. 8

D. 26

Answer: A

Watch Video Solution

18. If the length of each of a cube increases by 20%, then the volume of the cube increases by

A. 0.64

B. 0.8

C. $14.4\ \%$

D. $72.8\ \%$

Answer: D

Watch Video Solution

19. A cuboid has a total surface area of $96cm^2$. TheMsum of the squares of its length, breadth and height(in cm) is 48. Find its height (in cm).

A. 3

B. 4

C. 5

D. 6

Answer: B

Watch Video Solution

20. The angle substended by an arc at the centre of a circle is 70° . If the circumference of the circle is 132 cm , then find the area of the sector formed .

A. $269.5cm^2$

B. $1078cm^2$

C. $539cm^2$

D. $1617cm^2$

Answer: A

Watch Video Solution

21. At the most , how many cakes of soap dimensions 8 cm $\times$ 6 cm $\times$ 4 cm can be placed in a wooden box of inner measures 28 cm $\times$ 16 cm $\times$ 12 cm ?

A. 35

B. 24

C. 28

D. 36

Answer: C

 Watch Video Solution

22. If the dimensions of a cuboid decreases by 10% each, then its volume decreases by

A. 0.3

B. $27.1\ \%$

C. $10\ \%$

D. $26.4\ \%$

Answer: B

Watch Video Solution

Concept Application Level 3

1. Find the slant height of the largest possible cone that can be inserted in a hemisphere of volume $144\pi cm^3$

A. $9\sqrt{2}$cm

B. $12\sqrt{2}$cm

C. $6\sqrt{2}$cm

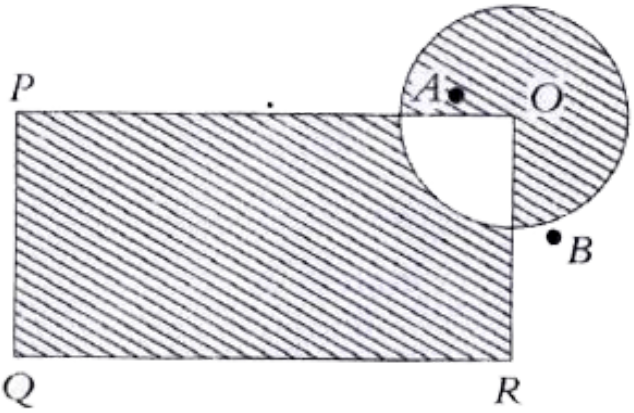
D. $7\sqrt{2}$cm

Answer: C

Watch Video Solution

2. In the figure given below , O is the centre of the circle and $OPQR$ is a rectangle . A is a point on PO such that $AO = \frac{1}{3} PO$ and B is

the midpoint of OR . Find the area of the shaded region if $PA = 8$ cm and $BR = 4$ cm (use $\pi = 3.14$)



A. $132.68cm^2$

B. $121.12cm^2$

C. 108.56 cm

D. $116.44cm^2$

Answer: B

Watch Video Solution

3. A hollow sphere which has internal and exter-nal diameters as 14 cm and 16 cm respectively is melted and recast into a cone with a height of 16 cm. Find the diameter of the base.

A. 6.5 cm

B. 13 cm

C. 26 cm

D. 10 cm

Answer: B

Watch Video Solution

4. A fountain pen with a cylindrical barrel of diameter2 cm and height 10.5 cm, filled with ink, can write 3300 words. How many words can be written withthat pen using 100 ml of ink? (Take 1 cc = 1 ml)

A. $40,000$

B. $30,000$

C. $20,000$

D. $10,000$

Answer: D

Watch Video Solution

5. From a solid cube of side 6 feet, a square holeof side 2 feet is punched through between

a pairof opposite faces. The volume (in cu.feet) of theremaining solid is

A. 20

B. 144

C. 192

D. 240

Answer: C

Watch Video Solution

6. The radius and slant height of a cone are in the ration $8:17$ .If its curved surface area is $544cm^2$, then find its volume .

A. $2560\pi cm^3$

B. $4800\pi cm^3$

C. $3468\pi cm^3$

D. $4206\pi cm^3$

Answer: A

View Text Solution

7. Find the number of coins , 3 cm in diameter and 1 cm thickness to be melted to form a right -circular cylinder of height 10 cm and diameter 9 cm .

A. 90

B. 60

C. 75

D. 30

Answer: A

Watch Video Solution

8. The sides of a triangle are 45 cm , 60 cm , and 75 cm . Find the length of the altitude drawn to the longest side from its opposite vertex (in cm) .

A. 27

B. 21

C. 39

D. 36

Answer: D

Watch Video Solution