



MATHS

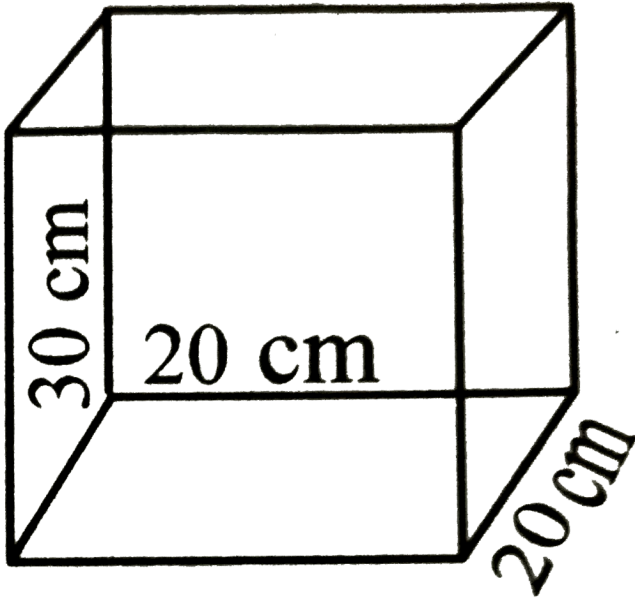
BOOKS - TARGET MATHS (HINGLISH)

MENSURATION

Examples

1. The length, breadth and height of an oil can are 20 cm, 20 cm and 30 cm respectively as shown in the adjacent figure. How much oil

will it contain? (1 litre = 1000 cm^3)



- A. 10 litres
- B. 12 litres
- C. 15 litres

D. 20 litres

Answer: B



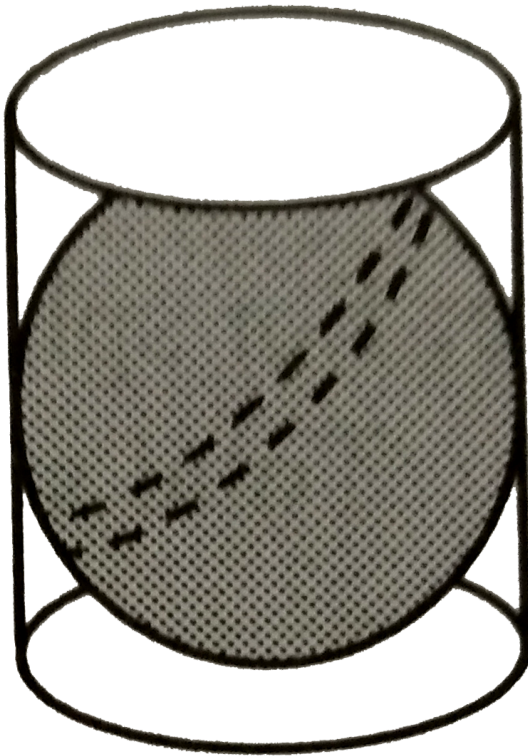
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2. The adjoining figure shows the measures of a Joker's cap. How much cloth is needed to make such a cap ?



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3. As shown in the adjacent figure, a sphere is placed in a cylinder. It touches the top, bottom and the curved surface of the cylinder. If radius of the base of the cylinder is ' r ',



(i) what is ratio of the radii of the sphere and the cylinder?

(ii) what is the ratio of the curved surface area of the cylinder and the surface area of the sphere?

(iii) what is the ratio of the volumes of the cylinder and the sphere?



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4. In the given figure, side of square ABCD is 7 cm. With centre D and radius DA, sector D-AXC

is drawn. find out the area of the shaded region.



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Practice Set 7 1

1. Find the volume of a cone if the radius of its base is 1.5 cm and its perpendicular height is 5 cm.



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2. Find the volume of a sphere of diameter 6 cm.



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3. Find the total surface area of the cylinder, if the radius of its base is 5 cm and height is 40 cm.



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4. Find the surface area of a sphere of radius 7cm.



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5. The dimensions fo a cuboid are 44 cm, 21 cm, 12 cm. It is melted and a cone of height 24 cm is made. Find the radius of its base.



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6. Observe the measures of pots in the given figures. How many jugs of water can the cylindrical pot hold?



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7. A cylinder and a cone have equal base. The height of the cylinder is 3 cm and the area of its base is 100 cm^2 . The cone is placed up on the cylinder. Volume of the solid figure so

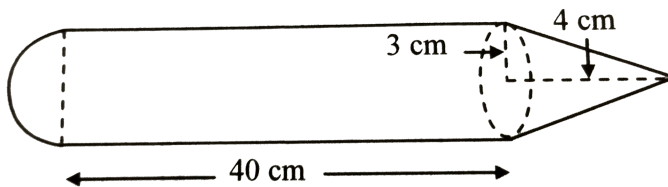
formed is 500 cm^3 . Find the total height of the figure.



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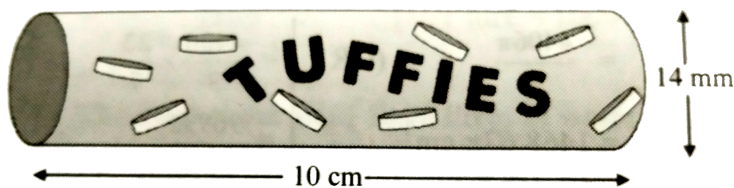
8. In the given figure, a toy made form a hemisphere, a cylinder and a cone is shown.

Find the total area of the toy.



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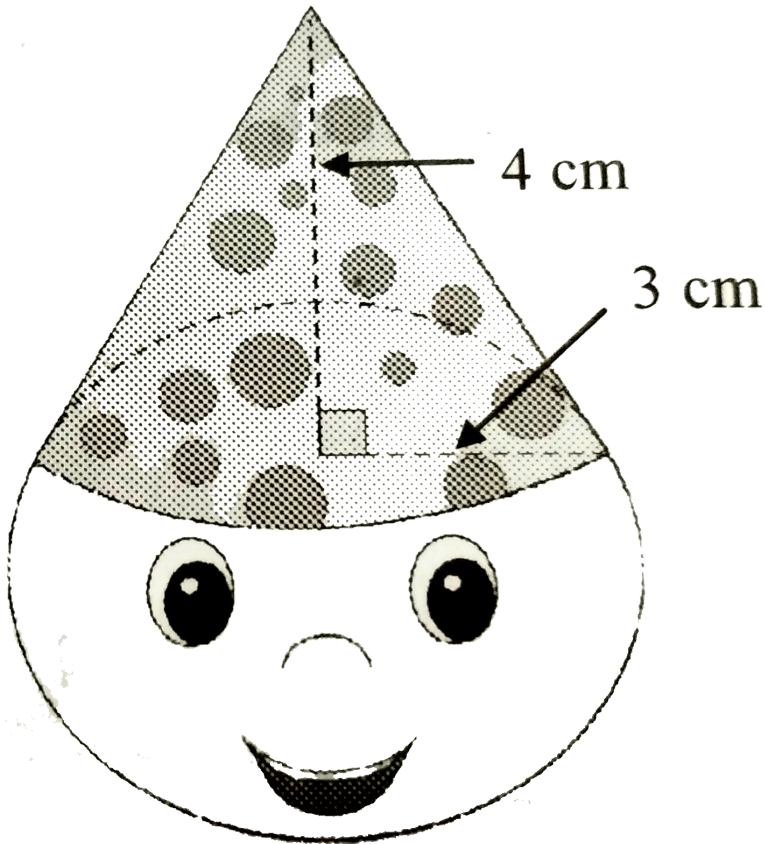
9. In the given figure, a cylindrical wrapper of flat tablets is shown. The radius of a tablet is 7 mm and its thickness is 5 mm. How many such tablets are wrapped in the wrapper?



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10. The given figure shows a toy. Its lower part is a hemisphere and the upper part is a cone.

Find the volume and the surface area of the toy from the measures shown in the figure.



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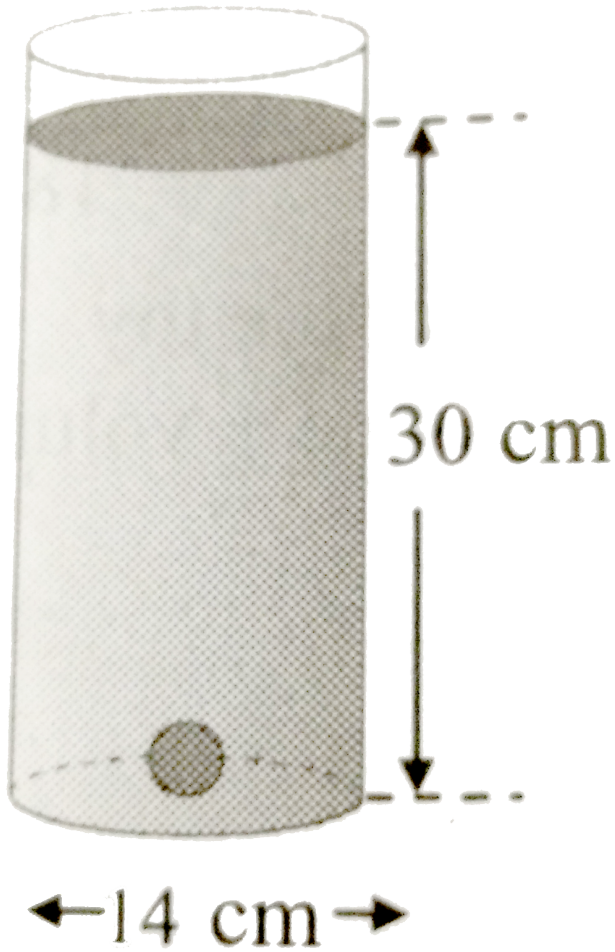
11. Find the surface area and the volume of a beach ball shown in the figure.



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12. As shown in the figure, a cylindrical glass contains water. A metal sphere of diameter 2 cm is immersed in it. Find the volume of the

water.



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Practice Set 7 2

1. The radii of two circular ends of frustum shape bucket are 14 cm and 7 cm. Height of the bucket is 30 cm. How many litres of water can it hold ? (1 litre = 1000cm^3)



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2. The radii of ends of a frustum are 14 cm and 6 cm respectively and its height is 6 cm. Find

its (i) curved surfaces area (ii) total surface area.



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3. The radii of ends of a frustum are 14 cm and 6 cm respectively and its height is 6 cm. Find its total surface area



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4. The radii of ends of a frustum are 14 cm and 6 cm respectively and its height is 6 cm. Find its volume. ($\pi = 3.14$)



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5. The circumferences of circular faces of frustum are 132 cm and 88 cm and its height is 24 cm. To find the curved surface area of frustum, complete the following activity.

$$\left(\pi = \frac{22}{7} \right)$$





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Practice Set 7 3

1. Radius of a circle is 10 cm. Measure of an arc fo the circle is 54° . Find the area of the sector associated with the arc. ($\pi = 3.14$)



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2. Measure of an arc of a circle is 80° and its radius is 18 cm. Find the length of the arc.

$$(\pi = 3.14)$$



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3. Radius of a sector of a circle is 3.5 cm and length of its arc is 2.2 cm. Find the area of the sector.



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4. Radius of a circle is 10 cm. Area of a sector of the circle is 100cm^2 . Find the area of its

corresponding major sector. ($\pi = 3.14$)



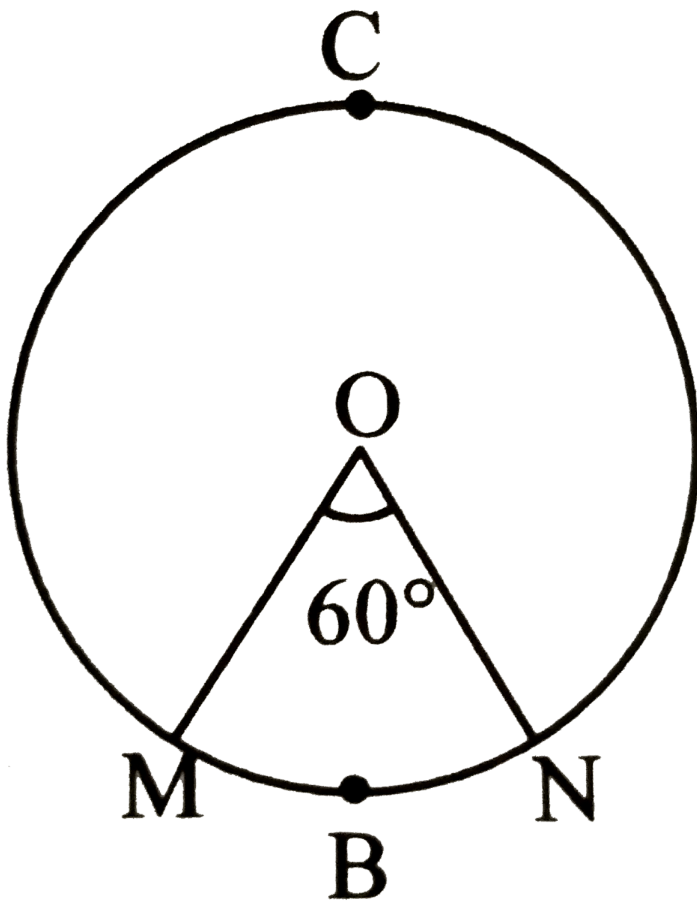
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5. Area of a sector of a circle of radius 15 cm is 30 cm^2 . Find the length of the arc of the sector.



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6. In the adjoining figure, radius of the circle is 7 cm and $m(\text{arc MBN}) = 60^\circ$ find

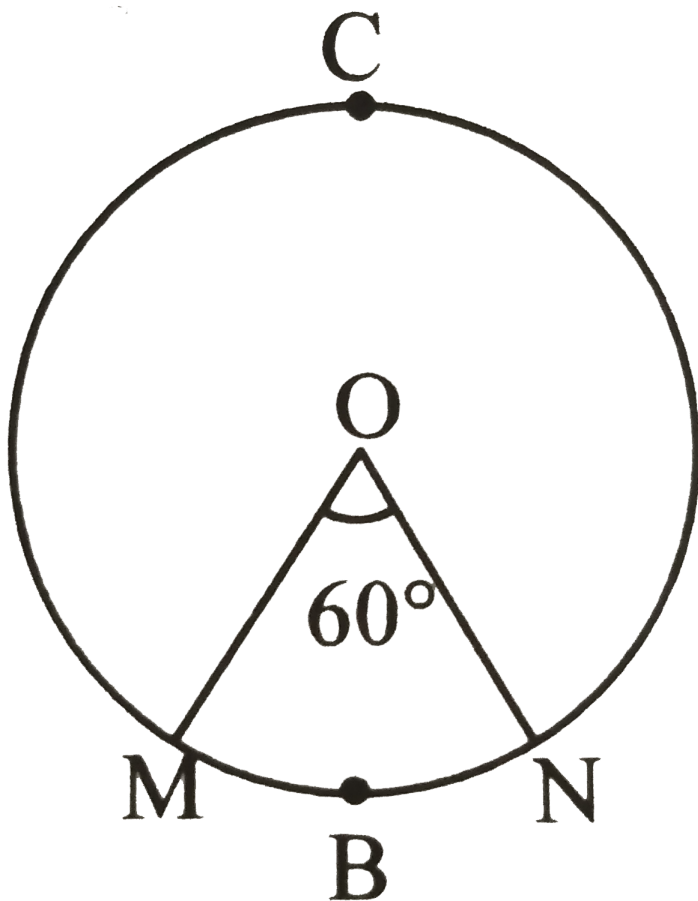


Area of the circle.



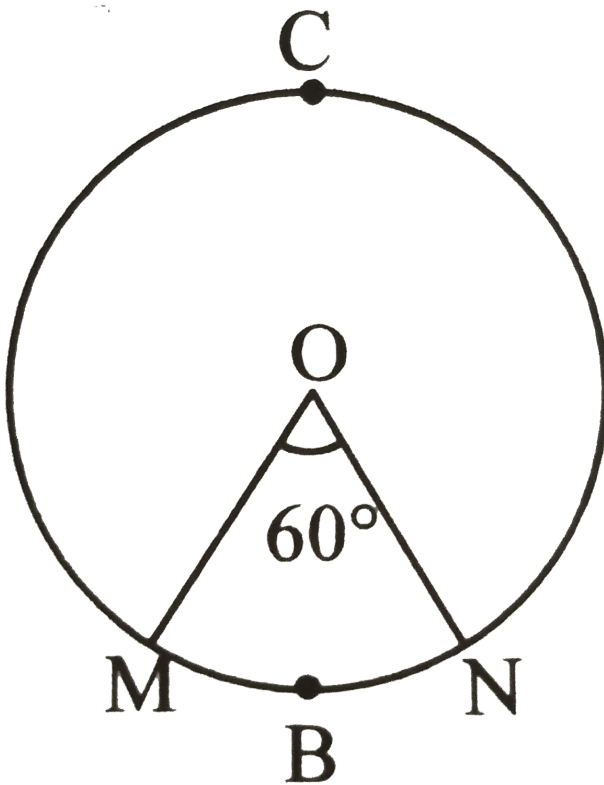
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7. In the adjoining figure, radius of the circle is 7 cm and $m(\text{arc MBN}) = 60^\circ$ find



A (O-MBN).

8. In the adjoining figure, radius of the circle is 7 cm and $m(\text{arc MBN}) = 60^\circ$ find



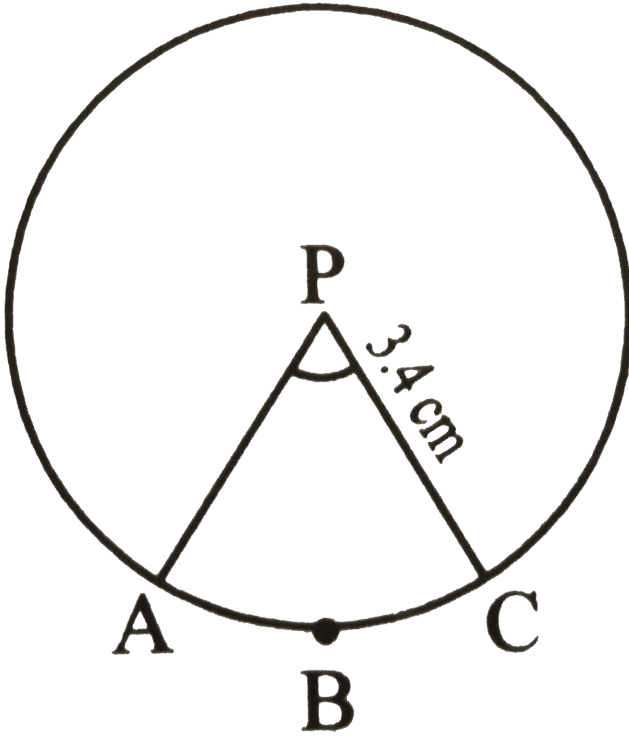
A(O-MCN).



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9. In the adjoining figure, radius of circle is 3.4 cm and perimeter of sector P-ABC is 12.8 cm. Find

A(P-ABC).



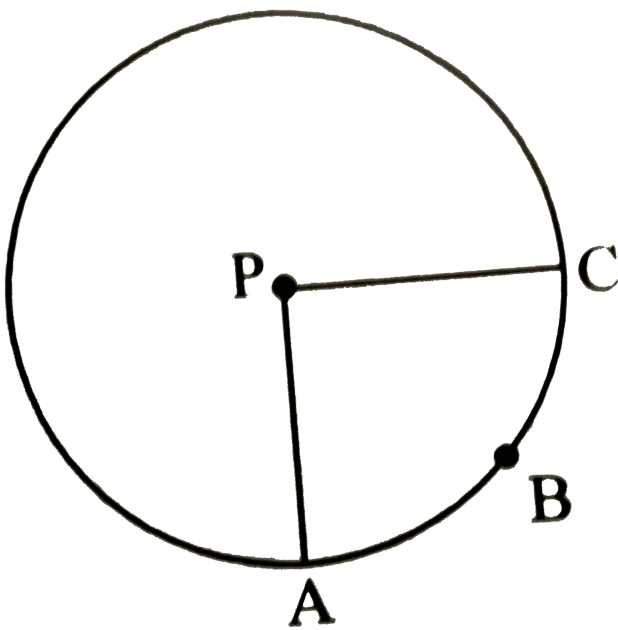
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10. In the adjoining figure, O is the center of the sector. $\angle ROQ = \angle MON = 60^\circ$, $OR = 7$ cm, and $OM = 21$ cm. Find the lengths of arc RXQ and arc MYN . $\left(\pi = \frac{22}{7}\right)$



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11. In the adjoining figure, if $A(P - ABC) = 154\text{cm}^2$ radius of the circle is 14 cm, find



$\angle APC$,



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12. In the adjoining figure, if

$A(P - ABC) = 154\text{cm}^2$ radius of the circle

is 14 cm, find $l(\text{arc}ABC)$.



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13. Radius of a sector of a circle is 7 cm. If measure of arc of the sector is 30° find the area of the sector



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14. Radius of a sector of a circle is 7 cm. If measure of arc of the sector is 210° Find the

area of sector



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15. Radius of a sector of a circle is 7 cm. If measure of arc of the sector is three right angles, find the area of the sector in each case.



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16. The area of a minor sector of a circle is 3.85cm^2 and the measure of its central angle

is 36° . Find the radius of the circle.



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17. In the given figure, $\square PQRS$ is a rectangle. If $PQ = 14\text{cm}$, $QR = 21\text{cm}$, find the areas of the parts x , y and z .



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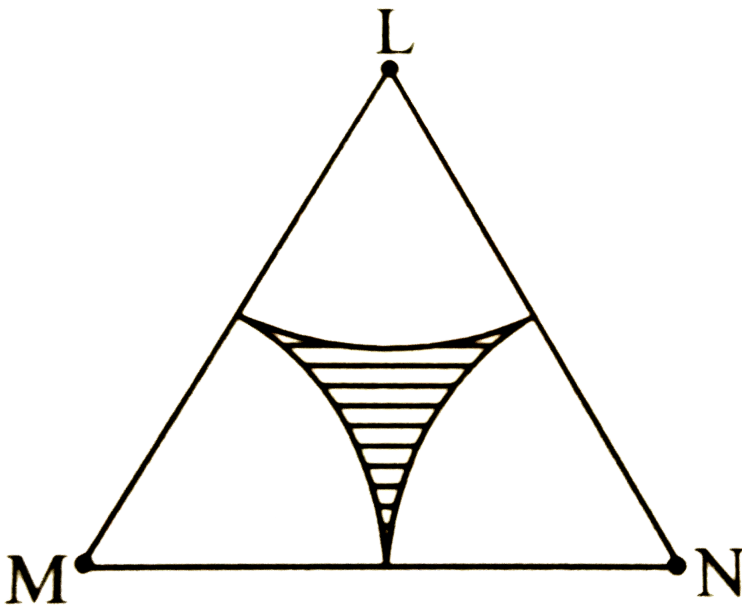
18. $\triangle LMN$ is an equilateral triangle. $LM = 14\text{cm}$. As shown in figure, three

sectors are drawn with vertices as centres and radius 7 cm. Find, $A(\Delta LMN)$



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19. ΔLMN is an equilateral triangle. $LM = 14\text{cm}$. As shown in figure, three sectors are drawn with vertices as centres and radius 7 cm. Find,



Area of any one of the sectors.

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20. $\triangle LMN$ is an equilateral triangle.

$LM = 14\text{cm}$ As shown in figure, three sectors

are drawn with vertices as centres and radius 7 cm. Find, Total area of all the three sectors.



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21. $\triangle LMN$ is an equilateral triangle.

$LM = 14\text{cm}$ As shown in figure, three sectors are drawn with vertices as centres and radius 7 cm. Find, Area of the shaded region.

$$(\sqrt{3} = 1.732)$$



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Practice Set 7 4

1. In the adjoining figure, A is the centre of the circle. angle $ABC = 45^\circ$ and $AC = 7\sqrt{2}cm$. Find the area of segment BXC. ($\pi = 3.14$)



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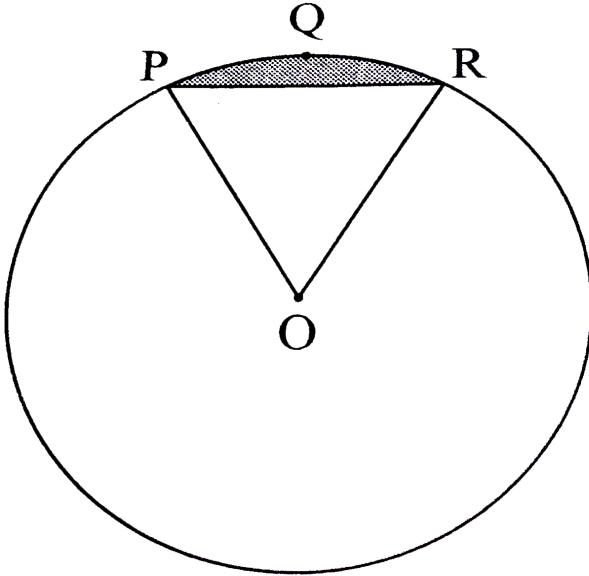
2. In the figure, O is the centre of the circle.

$$m(\text{arc PQR}) = 60^\circ$$

$$OP = 10 \text{ cm.}$$

Find the area of the shaded region.

$$(\pi = 3.14, \sqrt{3} = 1.73)$$



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3. In the adjoining figure, if A is the centre of the circle, $\angle PAR = 30^\circ$ $AP = 7.5$, find the area

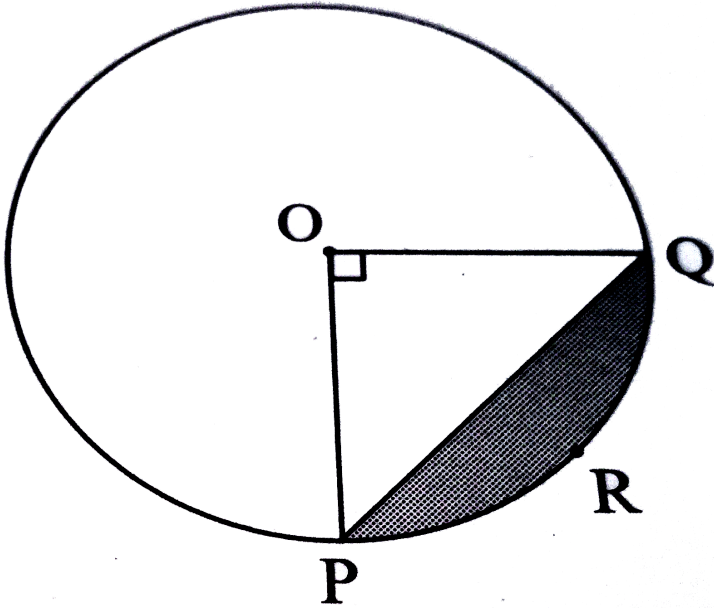
of the segment PQR. ($\pi = 3.14$)



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4. In the figure, if O is the centre of the circle, PQ is chord. $\angle POQ = 90^\circ$ area of shaded region is 114cm^2 find the radius of the circle

$$(\pi = 3.14)$$



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5. A chord of a circle of radius 15cm subtends an angle of 60° at the centre. Find the area of

corresponding major and minor segments of the circle. (Use $\pi = 3.14$ and $\sqrt{3} = 1.73$)



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Problem Set 7

1. The ratio of circumference and area of a circle is 2: 7. Find its circumference.

A. 14π

B. $\frac{7}{\pi}$

C. 7π

D. $\frac{14}{\pi}$

Answer: A



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2. If measure of an arc of a circle is 160° and its length is 44 cm, find the circumference of the circle.

A. 66 cm

B. 44 cm

C. 160 cm

D. 99 cm

Answer: D



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3. Find the perimeter of a sector of a circle if its measure is 90° and radius is 7 cm.

A. 44 cm

B. 25 cm

C. 36 cm

D. 56 cm

Answer: B



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4. Find the curved surface area of a cone of radius 7 cm and height 24 cm.

A. 440 cm^2

B. 550 cm^2

C. 330 CM^2

D. 110 cm^2

Answer: B



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5. The curved surface area of a cylinder is 440cm^2 and its radius is 5 cm. Find its height.

A. $\frac{44}{\pi} \text{ cm}$

B. $22\pi cm$

C. $44\pi cm$

D. $\frac{22}{\pi} cm$

Answer: A



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6. A cone was melted and cast into a cylinder of the same radius as that of the base of the cone. If the height of the cylinder is 5 cm, then what is the height of the cone?

A. 15 cm

B. 10 cm

C. 18 cm

D. 5 cm

Answer: A



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7. Find the volume of a cube of side 0.01 cm.

A. 1cm^3

B. 0.001cm^3

C. 0.0001cm^3

D. 0.000001cm^3

Answer: D



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8. Find the side of a cube of volume 1 m^3 .

A. 1 cm

B. 10 cm

C. 100 cm

D. 1000 cm

Answer: C



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9. A washing tub in the shape of a frustum of a cone has height 21 cm. The radii of the circular top and bottom are 20 cm and 15 cm respectively. What is the capacity of the tub in litres?



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10. Some plastic balls of radius 1 cm were melted and cast into a tube. The thickness, length and outer radius of the tube were 2 cm, 0 cm and 30 cm respectively. How many balls were melted to make the tube ?



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11. A metal parallelepiped of measures $16\text{cm} \times 11\text{cm} \times 10\text{cm}$ was melted to make coins. How many coins were made if the thickness and diameter of each coin was 2 mm and 2 cm respectively?



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12. The diameter and length of a roller is 120 cm and 84 cm respectively. To level the ground, 200 rotations of the roller are

required. Find the expenditure to level the ground at the rate of ₹ 10 per sq m.



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13. The diameter and thickness of a hollow metal sphere are 12 cm and 0.01 m respectively. The density of the metal is 8.88 gm per cm^2 . Find the outer surface area and mass of the sphere. [$\pi = 3.14$]



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14. A cylinder bucket of diameter 28 cm and height 20 cm was full of sand. When the sand in the bucket was poured on the ground, the sand got converted into a shape of a cone. If the height of the cone was 14 cm , what was the base area of the cone?



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15. The radius of a metallic sphere is 9 cm. It was melted to make a wire of diameter 4 mm. Find the length of the wire.



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16. The area of a sector of a circle of 6 cm radius is 15π sq. cm. Find the measure of the arc and length of the arc corresponding to the sector.



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17. In the adjoining figure, seg AB is a chord of a circle with center P. If $PA = 8$ cm and

distance of chord AB from the centre P is 4 cm,
find the area of the shaded portion.

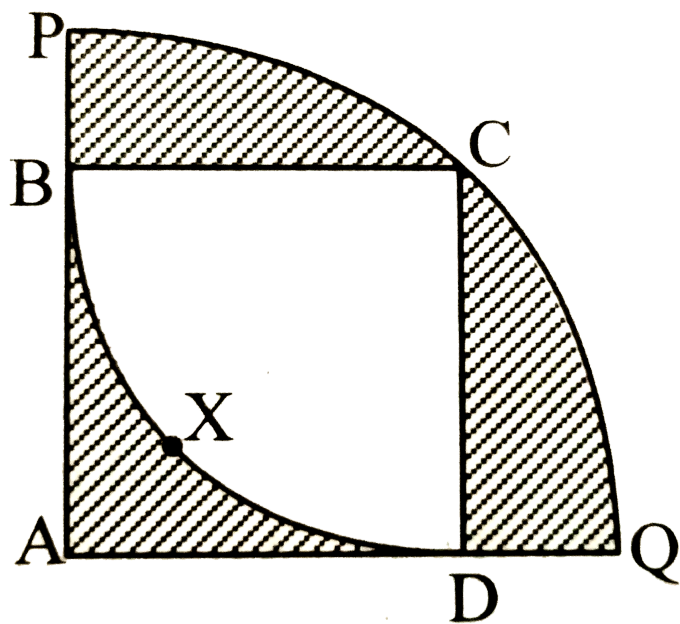
$$(\pi = 3.14) \quad \sqrt{3} = 1.73)$$



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18. In the adjoining figure, square ABCD is inscribed in the sector A-PCQ. The radius of sector C-BXD is 20 cm. Complete the following

activity to find the area of shaded region.



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Activities For Practice

1. The radii of two circular ends of frustum shape bucket are 14 cm and 7 cm. Height of the bucket is 30 cm. How many litres of water can it hold ? (1 litre = 1000cm^3)



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2. A regular hexagon is inscribed in a circle of radius 14 cm. Find the area of the region between the circle and the hexagon.

$$\left(\pi = \frac{22}{7}, \sqrt{3} = 1.732 \right)$$





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3. A chord of a circle of radius 20 cm subtends an angle 90° at the centre. Complete the following activity to find the area of minor segment as well as major segment.

$$(\pi = 3.14)$$



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Multiple Choice Questions

1. The dimensions of a cuboid in cm are $10 \times 9 \times 5$. The volume of the cuboid is

A. 225cm^2

B. 450cm^2

C. 675cm^2

D. 900cm^2

Answer: B



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2. The total surface area of a cube whose volume is 1728cm^3 is

A. 144 cm^2

B. 576 cm^2

C. 864 cm^2

D. 1440 cm^2

Answer: C



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3. The curved surface area of a right circular cone of height 15 cm and base diameter 16 cm is

A. $60\pi cm^2$

B. $68\pi cm^2$

C. $120\pi cm^2$

D. $136\pi cm^2$

Answer: D



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4. The diameter of a cone whose slant height is 35 cm and curved surface area is 1320 cm^2 is

A. 12 cm

B. 13 cm

C. 17 cm

D. 24 cm

Answer: B



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5. If the radius and height of the cone are 5 cm and 12 cm respectively, then its slant height is

A. 7 cm

B. 13 cm

C. 17 cm

D. 24 cm

Answer: B



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6. If the volume and height of a cone are 3600 cm^3 and 45 cm respectively, then the area of its base is

A. 80 cm^2

B. 160 cm^2

C. 240 cm^2

D. 720 cm^2

Answer: C



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7. If volumes of two spheres are in the ratio 64:27 then the ratio of their surface areas is

A. 3:4

B. 4:3

C. 9:16

D. 16:9

Answer: D



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8. If the ratio of the radii of a sphere and a hemisphere is 3:5 then the ratio of its curved surface area is

A. 3:5

B. 9:25

C. 18:25

D. 9:50

Answer: C



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9. If capacity of a water reservoir is $92.43m^3$ then it can hold _____ litres of water.

A. 92430000

B. 9243

C. 92430

D. 924300

Answer: C



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10. During conversion of a solid from one shape to another, the volume the new shape will

A. decrease

B. increase

C. remain same

D. be doubled

Answer: C



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11. A solid right circular cylinder of diameter 12 cm and height 27 cm is moulded into a sphere.

The radius of the sphere is

A. 9 cm

B. 27 cm

C. 3 cm

D. 8 cm

Answer: A



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12. The radii of the top and bottom of a bucket of slant height 10 cm are 14 cm and 6 cm respectively. The curved surface area of the bucket is ($\pi = 3.14$)

A. 628 cm^2

B. 629 cm^2

C. 630 cm^2

D. 631 cm^2

Answer: A



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13. A frustum of a cone has height 8 cm and radii of upper and lower circular surfaces are 22 cm and 16 cm respectively. Its slant height is

A. 10 cm

B. $8\sqrt{5}$ cm

C. $4\sqrt{6}$ cm

D. $6\sqrt{3}$ cm

Answer: A



14. The curved surface area of a frustum of a cone is $21\pi cm^2$. If the radii of its upper and lower circular surfaces are 5 cm and 7 cm respectively, then its total surface area is

A. $33\pi cm^2$

B. $53\pi cm^2$

C. $95\pi cm^2$

D. $165\pi cm^2$

Answer: C



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15. If $r_1 = 5cm$, $r_2 = 3cm$, $h = 9cm$, then the volume of frustum of the cone is

A. $69\pi cm^3$

B. $102\pi cm^3$

C. $147\pi cm^3$

D. $441\pi cm^3$

Answer: C



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16. If θ is the angle (in degrees) of a sector of a circle of radius r , then area of sector is

A. $\frac{\theta}{360} \times \pi r^2$

B. $\frac{\theta}{180} \times \pi r^2$

C. $\frac{\theta}{360} \times 2\pi r$

D. $\frac{\theta}{180} \times 2\pi r$

Answer: A



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17. $\frac{\text{Area of a sector}}{\text{Area of a circle}} =$

A. $\frac{\theta}{180}$

B. $\frac{\theta}{360}$

C. $\frac{180}{\theta}$

D. $\frac{360}{\theta}$

Answer: B



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18. If the radius of circle is 6 cm and the central angle is 280° , then the area of the corresponding sector is

A. $\frac{88}{3} \text{ cm}^2$

B. $\frac{176}{3} \text{ cm}^2$

C. 88 cm^2

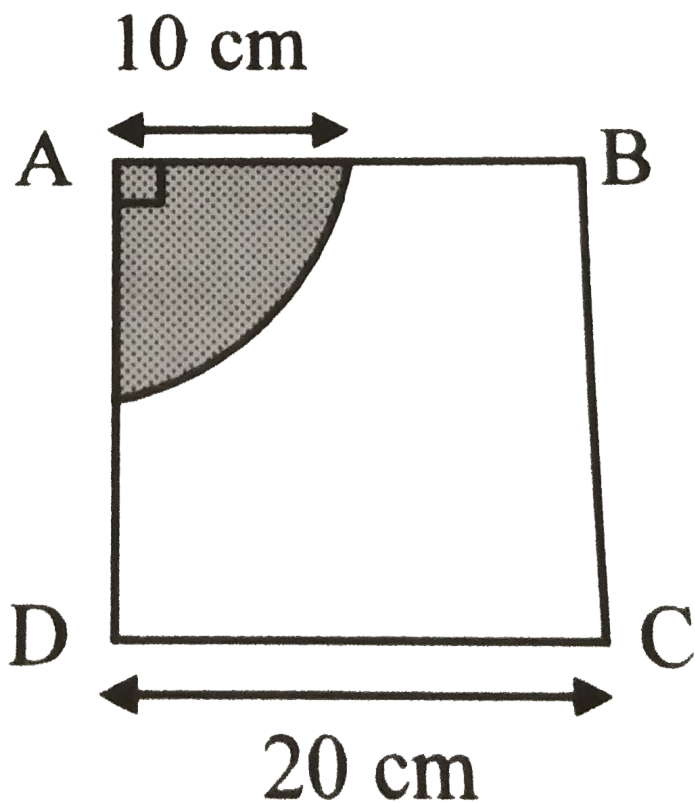
D. 176 cm^2

Answer: C



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19. If ABCD is a square, then the area of the sector shown in the figure is



A. $5\pi cm^2$

B. $25\pi cm^2$

C. $10\pi cm^2$

D. $100\pi cm^2$

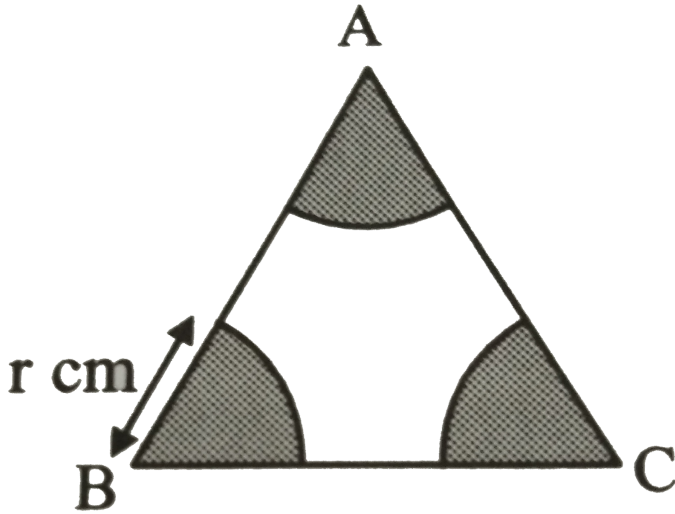
Answer: B



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20. If arcs of radius r cm are drawn with the vertices of an equilateral triangle ABC as shown in the figure, then the area of the

shaded region is



A. $\frac{\pi r^2}{6} \text{ cm}^2$

B. $\frac{\pi r^2}{2} \text{ cm}^2$

C. $2\pi r^2 \text{ cm}^2$

D. $6\pi r^2 \text{ cm}^2$

Answer: B



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21. If the area of a circle is 200 cm^2 and that of the minor sector is 50 cm^2 , then the area of the corresponding major sector is

A. 50 cm^2

B. 100 cm^2

C. 150 cm^2

D. 250 cm^2

Answer: C



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22. The diameter of a circle is 28 cm. The length of the arc when the corresponding central angle is 45° is

- A. 11 cm
- B. 22 cm
- C. 44 cm
- D. 88 cm

Answer: A



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23. The angle subtended at the center of a circle of radius 15 cm by an arc of length 15.7 cm is ($\pi = 3.14$)

A. 30°

B. 45°

C. 60°

D. 90°

Answer: C



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24. The area of sector whose radius and length of arc are 3 cm and 16 cm respectively is

A. 12cm^2

B. 24cm^2

C. 48cm^2

D. 18cm^2

Answer: B



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25. The area of sector is $40\pi\text{cm}^2$ and the length of the correspondig arc is 10π cm, then the diameter of the circle is

A. 8 cm

B. 10 cm

C. 12 cm

D. 16 cm

Answer: D



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26. If the area of sector and length of the arc of the sector are 54cm^2 and 18 cm respectively, then the radius of the circle is

A. 3 cm

B. 6 cm

C. 9 cm

D. 36 cm

Answer: B



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27. If the anugular measure of an arc is 36° and its length is 10 cm, then the circumference of the circle is

A. 10 cm

B. 100 cm

C. 36 cm

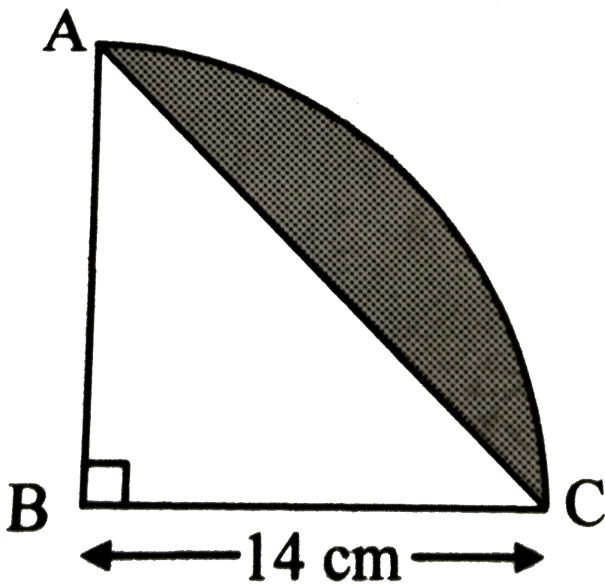
D. 360 cm

Answer: B



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28. The area of the shaded region shown in the figure is



A. 56cm^2

B. 98 cm^2

C. 154 cm^2

D. 252 cm^2

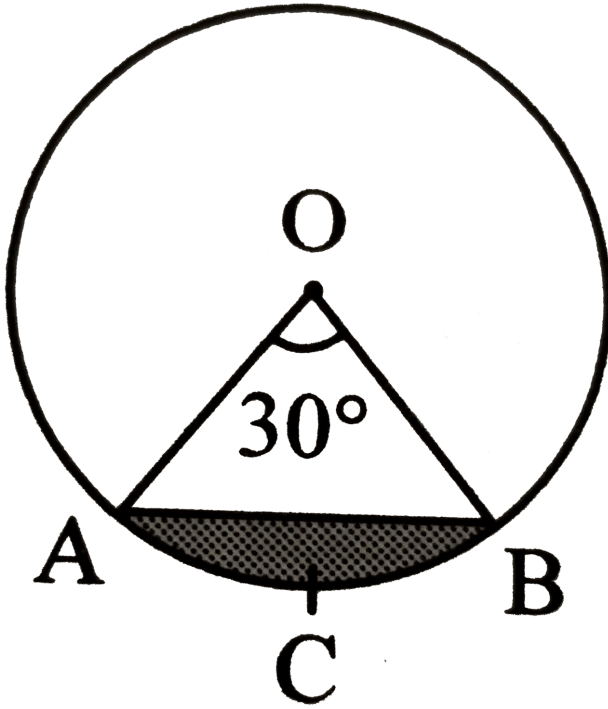
Answer: A



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29. If the radius of the circle is 6 cm, then the area of the shaded region shown in the figure

is



A. $\left(\frac{\pi}{2} - \frac{3}{2}\right)cm^2$

B. $\left(\frac{\pi}{12} - \frac{1}{4}\right)cm^2$

C. $(3\pi - 9)cm^2$

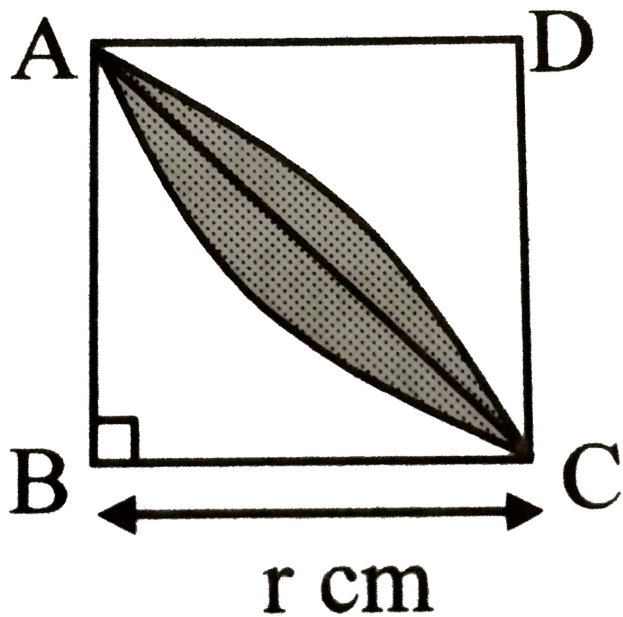
D. $(6\pi - 9)cm^2$

Answer: C



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30. If $\square ABCD$ is a square, then the area of the shaded region shown in the figure is



A. $r^2 \left(\frac{\pi}{4} - \frac{1}{2} \right) \text{cm}^2$

B. $r^2 \left(\frac{\pi}{2} - \frac{1}{4} \right) \text{cm}^2$

C. $r^2 \left(\frac{\pi}{2} - 1 \right) \text{cm}^2$

D. $r^2 (\pi - 2) \text{cm}^2$

Answer: C



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31. If the area of minor segment of a circle of diameter 28 cm is 206 cm^2 , then the area of the corresponding major segment is

A. 410 cm^2

B. 412 cm^2

C. 2250 cm^2

D. 2258 cm^2

Answer: A



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Additional Problems For Practice Based On Practice Set 7 1

1. The circumferences of the base of a 12 m high conical tent is 66 m. Find the volume of air contained in it.



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2. The total surface area of a right circular cone of slant height 13 cm is $90\pi\text{cm}^2$, find its radius and volume.



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3. The volume of a sphere is $36\pi\text{cm}^3$. Find the surface area of the sphere.



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4. A roller of diameter 0.9 m and length 1.8 m is used to press the ground. Find the area of ground pressed by it in 500 revolutions.

$$(\pi = 3.14)$$

A. 2543.4 m^2

B. 2600 m^2

C. 2500 m^2

D. none of these

Answer: A



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5. The radius and height of a cylindrical water reservoir is 2.8 m and 3.5 m respectively. How much maximum water can the tank hold? A person needs 70 litres of water per day. For how many persons is the water sufficient for a day? $\left(\pi = \frac{22}{7}\right)$

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6. The dimensions of metallic cuboid are $44\text{cm} \times 42\text{cm} \times 21\text{cm}$. It is molten and recast into a sphere. Find the surface area of the sphere.



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7. A solid metallic cone of radius 2 cm and height 8 cm is melted into a sphere. Find the radius of sphere.



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8. The diameter of iron sphere is 6 cm. It is melted and drawn into a wire having diameter of the cross section as 0.2 cm. Find the length of the wire.

A. 33 m

B. 36 m

C. 35 m

D. 38 m

Answer: B



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9. How many lead balls, each of radius 1 cm, can be made from a sphere of radius 8 cm ?



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10. How many solid cylinders of radius 10 cm and height 6 cm can be made by melting a solid sphere of radius 30 cm?



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11. A solid metallic sphere of diameter 16 cm is melted and recast into a number of smaller cones each of radius 4 cm and height 8 cm. Find the number of cones so formed.

- A. 8
- B. 10
- C. 12
- D. 16

Answer: D



12. In the figure, a tent is in the shape of a cylinder surmounted by a conical top of same diameter. If the height and diameter of cylindrical part are 2.1 m and 3 m respectively and the slant height of conical part is 2.8 m , find the area of canvas needed to make the tent. $\left(\pi = \frac{22}{7} \right)$

A. $43m^2$

B. $35m^2$

C. $33m^2$

D. $44m^2$

Answer: C



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13. A tent of a circus is such that its lower part is cylindrical and upper part is conical. The diameter of the base of the tent is 48 m and the height of the cylindrical part is 15 m. Total height of the tent is 33 m. Find area of canvas

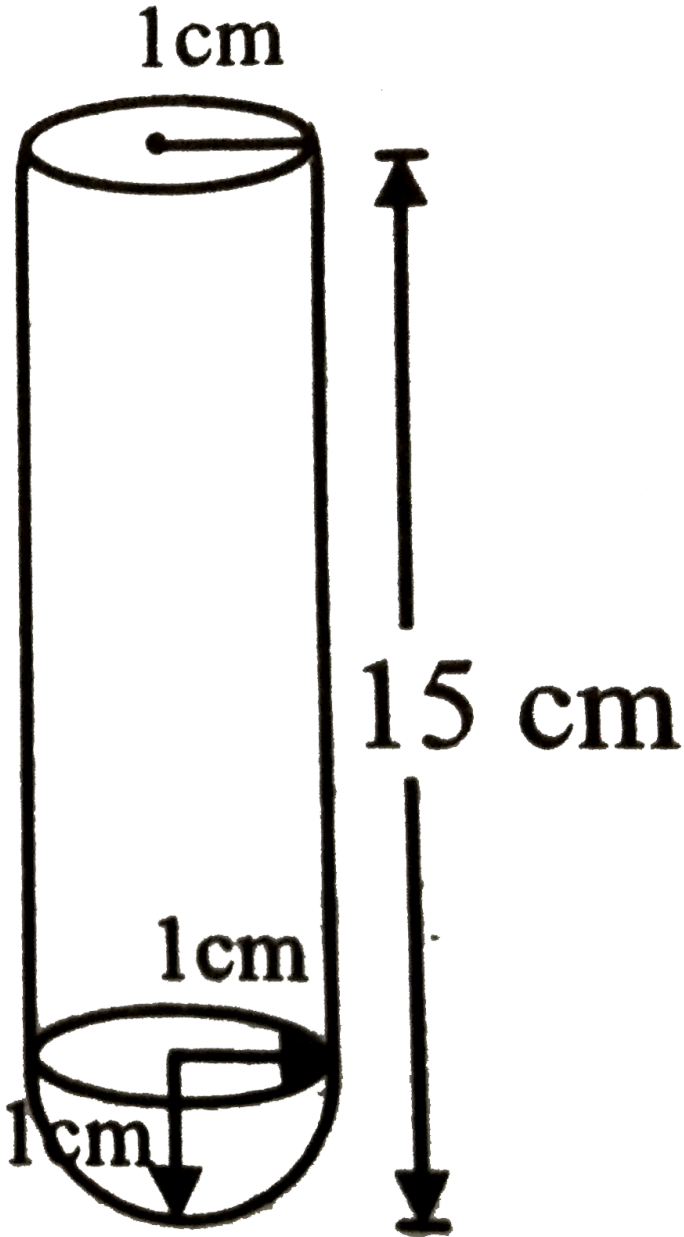
required to make the tent. Also find volume of air in the tent.



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14. A test tube has diameter 20 mm and height is 15 cm. The lower portion is a hemisphere.

Find the capacity of the test tube. ($\pi = 3.14$)

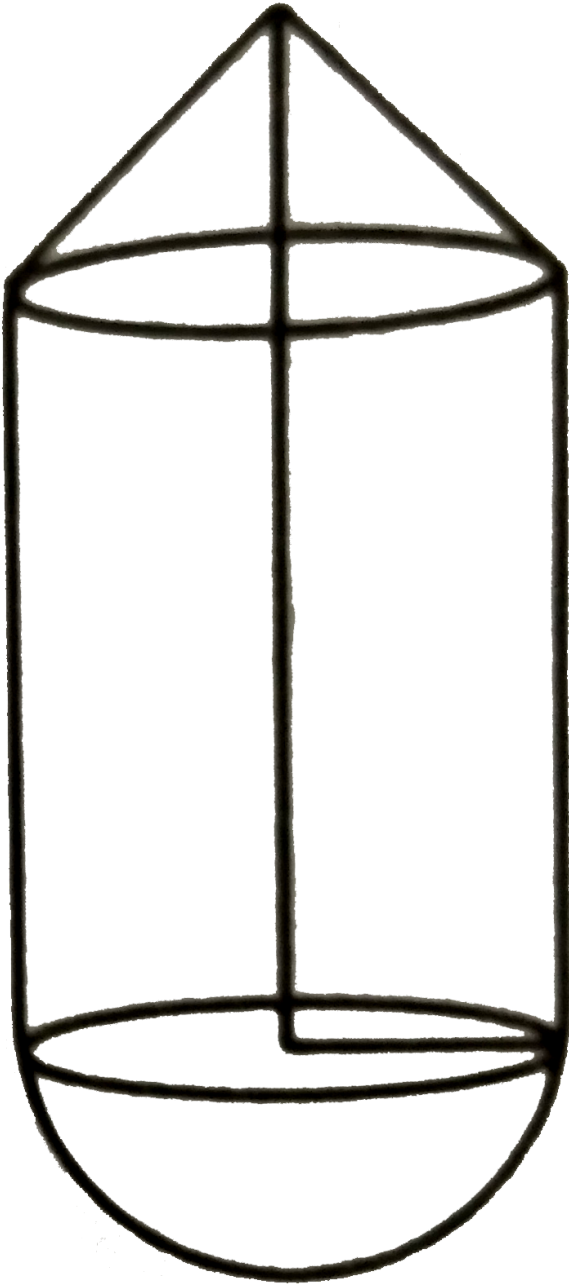




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15. A toy is a combination of a cylinder, hemisphere and a cone, each with radius 10 cm as shown in the figure. Height of the conical part is 10 cm and total height is 60 cm. Find the total surface area of the toy.

$$(\pi = 3.14, \sqrt{2} = 1.41)$$





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Additional Problems For Practice Based On Practice Set 7 2

1. A glass in the form of a cone has radii 8 cm 6 cm and slant height 30 cm. Find the curved surface area of glass.



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2. Radii of the top and the base of a frustum are 14 cm, 8 cm, respectively. Its height is 8 cm.

find its

(i) curved surface area,

(ii) total surface area,

(iii) volume. ($\pi = 3.14$)



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3. A solid is in the shape of a frustum of a cone. The diameters of the two circular ends

are 60 cm and 36 cm and the height is 9 cm.

Find the area of its whole surface and the volume.



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4. A bucket is frustum shaped. Its height is 28 cm. Radii of circular faces are 12 cm and 15 cm.

Find the capacity of the bucket. $\left(\pi = \frac{22}{7}\right)$



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5. A 105 cm high tank is in the shape of frustum of a cone. If the diameter of the circular faces are 50 cm and 40 cm, then find how much water can be stored in the tank.



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6. A bucket is in the form of a frustum of a cone and holds 28.490 litres of water. The radii of the top and bottom are 28 and 21 cm respectively. Find the height of the bucket.





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Additional Problems For Practice Based On Practice Set 7 3

1. If the sector of a circle with radius 10 cm has central angle 18° , find the area of the sector.

($\pi = 3.14$)



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2. If the sector of a circle with radius 10 cm has central angle 72° , find the area of the sector.

$$(\pi = 3.14)$$



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3. Find the area of sector whose central angle and radius are 60° and 21 cm respectively.

$$\left(\pi = \frac{22}{7}\right)$$



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4. The diameter of a circle is 10 cm. Find the length of the arc, when the corresponding Central angle is as given below. ($\pi = 3.14$) (i) 45° (ii) 180°



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5. A sector is cut off from a circle of radius 21 cm. The angle of the sector is 120° . Find the length of its arc and the area.



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6. Find the area of the sector of a circle of radius 8 cm and arc with length 15 cm.



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7. Find the area of sector whose arc length and radius are 16 cm and 5 cm respectively.



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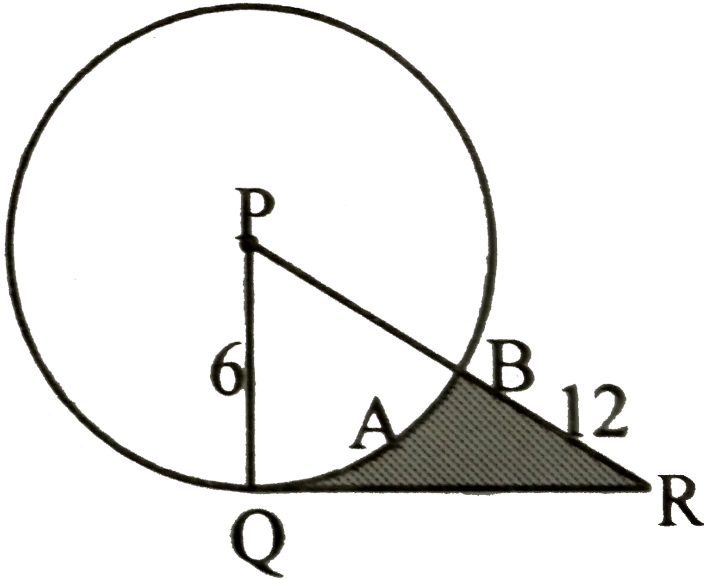
8. Find the area of the sector whose arc length and radius are 10 cm and 5 cm respectively.



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9. In the given figure, P is the centre of the circle of radius 6 cm. Seg QR is a tangent at Q. If $PR = 12$, find the area of the shaded

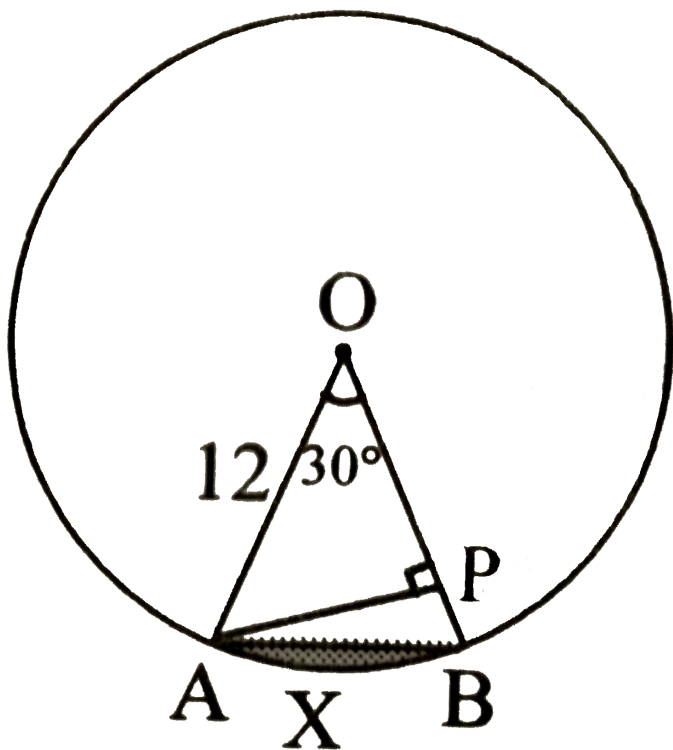
region. ($\sqrt{3} = 1.73$)



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**Additional Problems For Practice Based On
Practice Set 7 4**

1. In the given figure, $\angle AOB = 30^\circ$, $O = 12$ cm Find the area of the segment. ($\pi = 3.14$)



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2. Find the area of the shaded region.

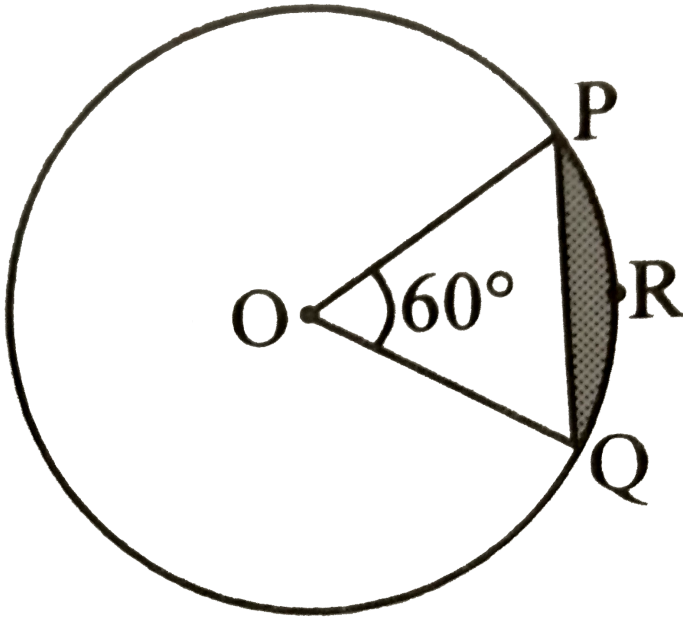
$$\left(\pi = \frac{22}{7} \right), \sqrt{3} = 1.73)$$



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3. In the given figure, if $\angle POQ = 60^\circ$ and radius = 20 cm, then find the areas of the minor segment and the major segment.

$$(\pi = 3.14, \sqrt{3} = 1.73)$$



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4. A chord AB of a circle of radius 10 cm makes a right angle at the centre of the circle. Find

the area of the major and minor segment. (Use

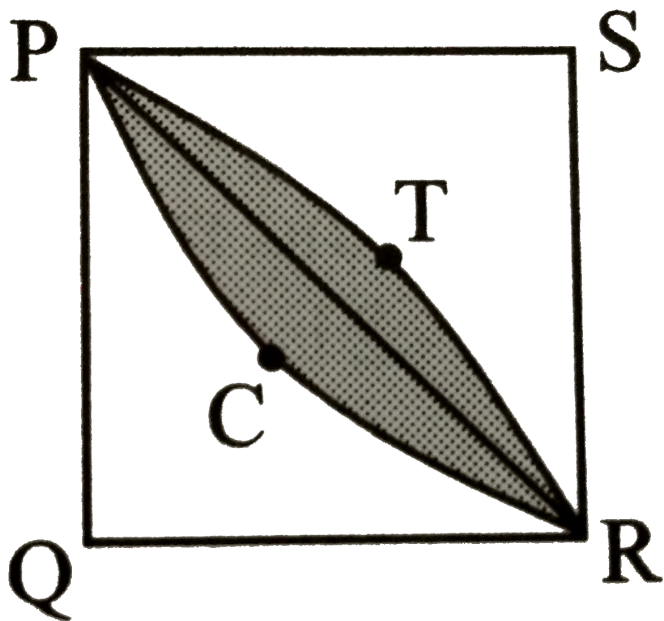
$$\pi = 3.14)$$



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5. In the given figure, if $\square PQRS$ is a square of side 10 cm, then find the area of the shaded

region.



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6. A regular hexagon is inscribed in a circle of radius 14 cm. Find the area of the region

between the circle and the hexagon.

$$\left(\pi = \frac{22}{7}, \sqrt{3} = 1.732 \right)$$



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Chapter Assessment

1. The perimeter of a sector having central angle of measure 270° and radius 14 cm is

A. 66 cm

B. 94 cm

C. 462 cm

D. 490 cm

Answer: B



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2. If the ratio of area of the circle and the circumference is $9:4$, then circumference of the circle is

A. 9π cm

B. $\frac{9}{\pi}$ cm

C. 4.5π cm

D. $\frac{4.5}{\pi}$ cm

Answer: A



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3. The curved surface area of the cone of radius 5 cm and height 12 cm is

A. $60\pi cm^2$

B. $65\pi cm^2$

C. $300\pi cm^2$

D. $325\pi cm^2$

Answer: B



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4. The side of a cube having volume $27 cm^3$ is

A. 0.3 mm

B. 3 mm

C. 30 mm

D. 300 mm

Answer: C



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5. The radii of the circular faces of the frustum are 20 cm and 12 cm respectively . If the height of the frustum is 15 cm , then find its slant height.



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6. The measure of central angle of a circle is 60° and the radius of circle is 21 cm. Find the area of the sector associated with the central angle.

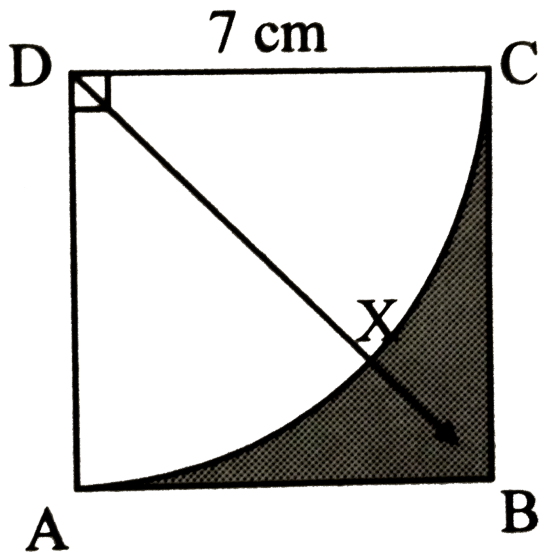


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7. In the given figure side of square ABCD is 7 cm.

With centre D and radius DA, sector D-AXC is

drawn. Fill in the following boxes properly and find out the area of the shaded region.



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8. The circumferences of circular faces of a frustum are 132 cm and 88 cm and its height is 24 cm. To find the slant height of the frustum complete the following activity. $\left(\pi = \frac{22}{7}\right)$

$$\text{circumference}_1 = 2\pi r_1 = 132$$

$$r_1 = \frac{132}{2\pi} = \square$$

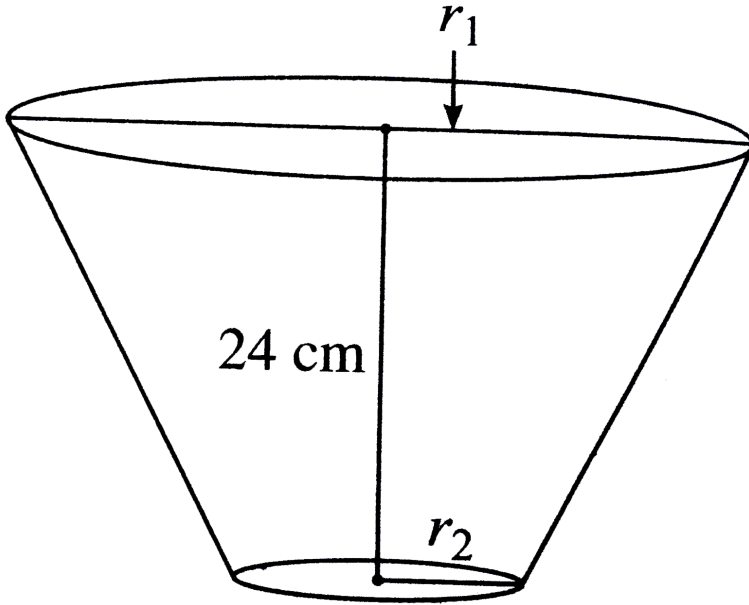
$$\text{circumference}_2 = 2\pi r_2 = 88$$

$$r_2 = \frac{88}{2\pi} = \square$$

Slant height of frustum,

$$l = \sqrt{h^2 + (r_1 - r_2)^2}$$

$$= \sqrt{24^2 + \square^2} = \text{square cm}$$



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9. Find the curved surface area of a frustum if the radii of the circular faces are 15 cm and 5

cm, and its slant height is 26 cm.



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10. Find the volume of a sphere of diameter 6 cm.



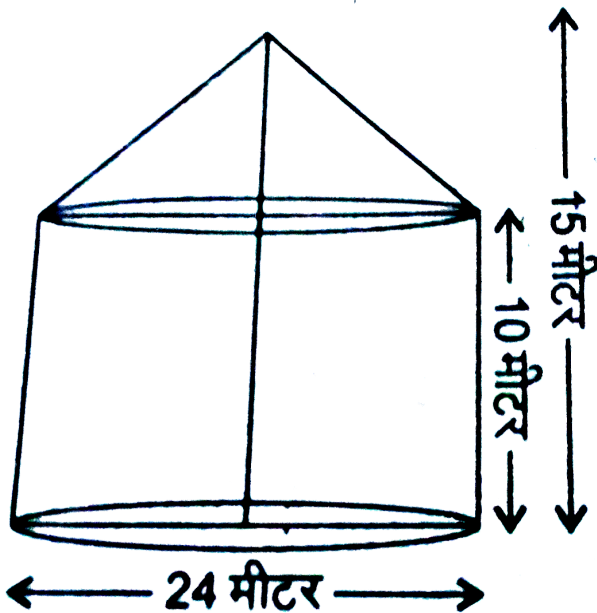
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11. Find the area of sector whose arc length and radius are 20 cm and 8 cm respectively.



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12. एक तम्बू ऊपर से शक्वाकार तथा निचे से लंबवृत्तिये बेलने के रूप का है। तम्बू की सम्पूर्ण ऊंचाई 15 मीटर तथा आधार का व्यास 24 मीटर है । तम्बू के बेलनाकार भाग की ऊंचाई 10 मीटर है । ज्ञात कीजिए की तम्बू हेतु कितने कैनवास की आवश्यकता होगी ?





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13. The length, breadth and height of a parallelepiped are 98 cm, 40 cm and 22 cm respectively. It is melted and spheres of radius 7 cm are formed from it. Find the number of spheres that are formed.



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14. In the adjoining figure, if O is the centre of the circle, PQ is a chord, $\angle POQ = 90^\circ$, area of shaded region is 114 cm^2 , find the radius of the circle. $\left(\pi = \frac{22}{7}\right)$



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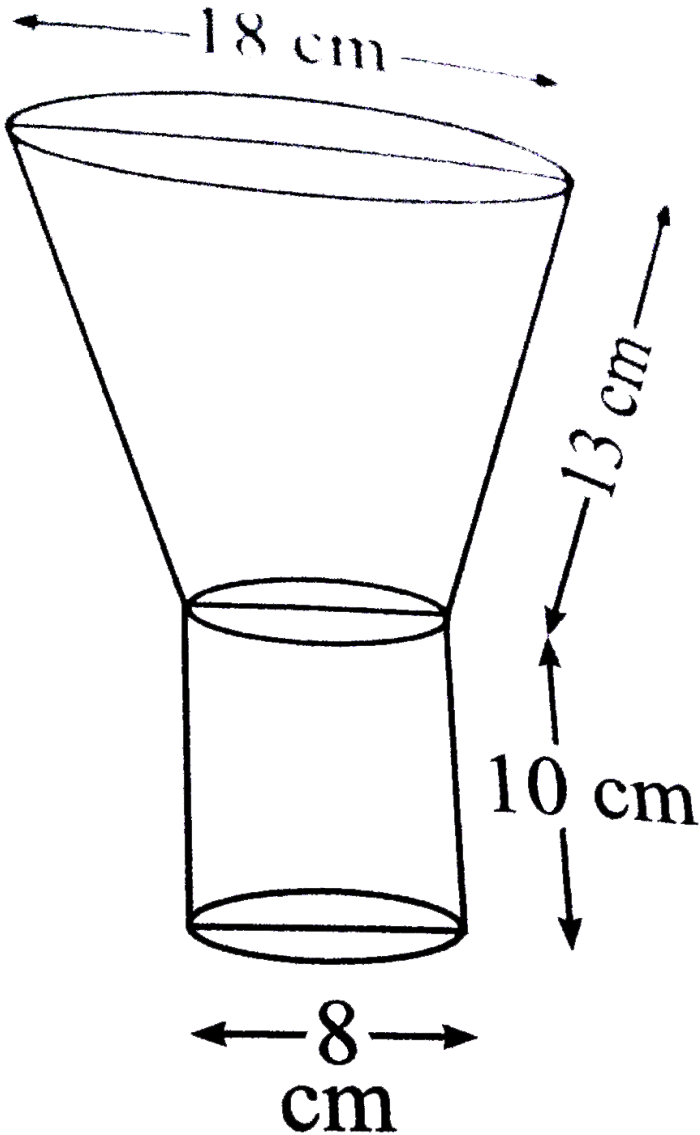
15. null



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16. An oil funnel of tin sheet consists of a cylindrical portion 10 cm long attached to a frustum of cone. The diameters of the top and bottom of the frustum are 18 cm and 8 cm respectively. If the slant height of the frustum of the cone is 13 cm, find the area of the tin required to make the funnel from the given information in the figure

$(\pi = 3.14)$



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17. A cylinder of radius 12 cm contains water upto the height of 20 cm. A spherical iron ball is dropped into the cylinder and thus water level is raised by 6.75 cm. What is the radius of the ball ?



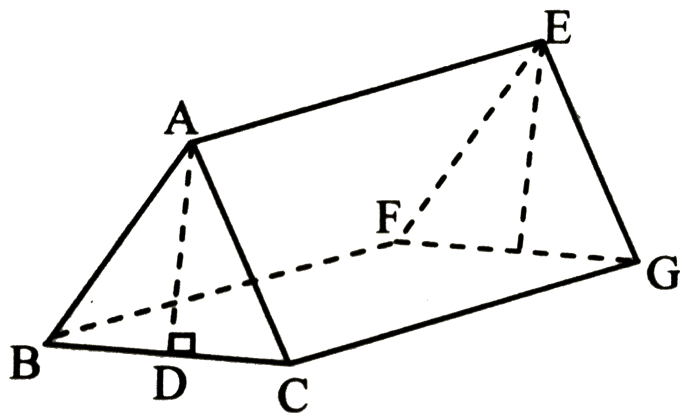
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18. किसी बेलन का सम्पूर्ण पृष्ठ क्षेत्रफल गोले के पृष्ठ क्षेत्रफल से दोगुनी है। यदि उनकी त्रिज्याएं समान हों बेलन तथा गोले के आयतन का अनुपात ज्ञात करें?



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19. A tent is in the shape of triangular prism resting on a rectangular base. If $AB = AC$, $AD = 0.8m$, $BC = 3m$ and a length of the tent = $6m$, $\angle ABC = 42^\circ$, then find,



a. $\angle ACB$

b. AB

c. Volume of the tent



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Textual Activity

1. Air is leaking from a spherical-shaped advertising balloon at the rate of 26 cubic feet per minute. If the radius of the ball is 7 feet, how long would it take for the balloon to

empty fully ? Round your answer to the nearest minute. Use the approximate of value of π , that is 3.14.



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