Notations:
1. Options shown in green color and with ✔ icon are correct.
2. Options shown in red color and with ✗ icon are incorrect.

Question Paper Name: Mensuration
Subject Name: Mensuration
Creation Date: 2020-03-20 18:32:39
Duration: 150
Total Marks: 150
Display Marks: Yes
Share Answer Key With Delivery Engine: No
Actual Answer Key: Yes
Calculator: Scientific
Magnifying Glass Required?: No
Ruler Required?: No
Eraser Required?: No
Scratch Pad Required?: No
Rough Sketch/Notepad Required?: No
Protractor Required?: No
Show Watermark on Console?: Yes
Highlighter: No
Auto Save on Console?: Yes

Mensuration

Group Number: 1
Group Id: 4697503
Is this Group for Examiner?: No

Mensuration

Section Id: 4697503
Section Number: 1
Section type: Online
Display Number Panel: Yes
Group All Questions: Yes
Mark As Answered Required?: Yes
Sub-Section Number: 1
Sub-Section Id: 4697504
Question Shuffling Allowed: Yes

Question Number : 1
Question Id : 469750601
Question Type : MCQ
Option Shuffling : Yes
Display Question Number : Yes
Is Question Mandatory : No
Single Line Question Option : No
Negative Marks Display Text : 1/3
Orientation : Vertical
Correct Marks : 1
Wrong Marks : 0.33

What will be the largest angle of the quadrilateral if the angles are in the ratio 10 : 12 : 22 : 28?

Options:
1. ✗ 130°
Question Number : 2 Question Id : 469750602 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a parallelogram ABCD if bisectors of angles A and B meet at T, then the measure of the angle ATB is:

Options :
1. 45°
2. 75°
3. ✔ 90°
4. ✗ 60°

Question Number : 3 Question Id : 469750603 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
The ratio of the length and breadth of a rectangular field is 15 : 8, and its perimeter is 46 m. What is the length of its diagonal?

Options :
1. ✗ 19 m
2. 18 m
3. ✔ 17 m
4. ✗ 16 m

Question Number : 4 Question Id : 469750604 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
If ABCD is a trapezium whose parallel sides are 10 cm and 18 cm and length of its altitude is 8 cm, then find the area of the trapezium?

Options :
1. ✗ 140 cm²
2. ✔ 112 cm²
3. 56 cm²
4. 84 cm²

Question Number : 5 Question Id : 469750605 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
What is the area of the triangle whose sides are given as 16 cm, 63 cm and 65 cm, respectively?

Options :
1. 504 cm²
2. 534 cm²
3. 548 cm²
4. 594 cm²

Question Number : 6 Question Id : 469750606 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
If an interior angle of a regular polygon is 120°, what is the number of sides of the polygon?

Options :
1. 7
2. 8
3. 6
4. 9

Question Number : 7 Question Id : 469750607 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
What will be the number of diagonals in an 8-sided polygon?

Options :
1. 18
2. 19
3. 20
4. 21

Question Number : 8 Question Id : 469750608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
If the difference in an interior and an exterior angle of a polygon is 100°, then what is the number of sides of that polygon?

What is the area of the equilateral triangle if its altitude is 3 cm? (Value of square root 3 is to be taken up to 2 decimal places)

If the radius of the circle which is inscribed in an equilateral triangle is 3½ cm, what is the length of the side of the triangle? (Value of square root 3 is to be taken up to 2 decimal places)
If sum of lengths of the sides of two squares is 26 m, then what is the sum of their perimeters?

Options:
1. ✗ 208 m
2. ✔ 104 m
3. ✗ 52 m
4. ✗ 62 m

Question Number: 12 Question Id: 469750612 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

If the area of a square is 100 m² and a rectangle is drawn along its side such that the area of the figure so formed is 280 m², then find the perimeter of the rectangle outside the square.

Options:
1. ✗ 28 m
2. ✔ 56 m
3. ✗ 84 m
4. ✗ 112 m

Question Number: 13 Question Id: 469750613 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

If the length of a rectangle is increased by 30% and the breadth is increased by 40%, then what is the percentage increase in the area?

Options:
1. ✗ 86
2. ✔ 82
3. ✗ 92
4. ✗ 62

Question Number: 14 Question Id: 469750614 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
In a parallelogram having all sides equal, one diagonal is equal to its side. What will be the ratio of the square of the longer diagonal to the square of the shorter diagonal of the parallelogram?

Options:
1. ✗ 3 \frac{1}{2} : 1
2. ✓ 3 : 1
3. ✗ 4 : 1
4. ✗ 5 : 1

Question Number: 15  Question Id: 469750615  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Is Question Mandatory: No  Single Line Question Option: No  Negative Marks: Display Text: 1/3  Option Orientation: Vertical  Correct Marks: 1  Wrong Marks: 0.33

If the two diagonals of a quadrilateral are 9 cm and 12 cm and the angle between them is 30°, then what is the area of the quadrilateral?

Options:
1. ✗ 108 cm²
2. ✗ 54 cm²
3. ✓ 27 cm²
4. ✗ 256 cm²

Question Number: 16  Question Id: 469750616  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Is Question Mandatory: No  Single Line Question Option: No  Negative Marks: Display Text: 1/3  Option Orientation: Vertical  Correct Marks: 1  Wrong Marks: 0.33

In a given quadrilateral length of a diagonal is 20 cm and perpendicular distance from its vertices are 8 cm and 10 cm, respectively, what will be the area of the quadrilateral?

Options:
1. ✓ 180 cm²
2. ✗ 360 cm²
3. ✗ 90 cm²
4. ✗ 70 cm²
Question Number : 17 Question Id : 469750617 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a triangle ABC, if AD is the median on side BC and O is the centroid such that OD = 6 cm, then what is the area of the square whose diagonals are same as the length of the median AD?

Options :
1. ✗ 164 cm²
2. ✗ 160 cm²
3. ✗ 81 cm²
4. ✓ 162 cm²

Question Number : 18 Question Id : 469750618 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
Area of a square is 64 cm². There are 8 rectangles drawn by increasing one side of the square by 2 units in each case keeping the breadth fixed. Find the area of the figure so obtained.

Options :
1. ✗ 182 cm²
2. ✗ 172 cm²
3. ✓ 192 cm²
4. ✗ 202 cm²

Question Number : 19 Question Id : 469750619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
Two triangles are similar and ratio of their areas is 81 : 121. Find the ratio of their corresponding sides.

Options :
1. ✗ 11 : 9
2. ✓ 9 : 11
3. ✗ 10 : 11
4. ✗ 11 : 10
Question Number: 20 Question Id: 469750620 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
In a regular polygon, the ratio of interior and exterior angles is 3 : 2. Number of sides of the polygon is:

Options:
1. ✔ 5
2. 8
3. 10
4. 12

Question Number: 21 Question Id: 469750621 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
In a triangle ABC, a line parallel to BC intersects AB and AC at D and E, respectively. If AB = 3AD, then find BC : DE.

Options:
1. ✔ 1 : 2
2. 3 : 1
3. 1 : 3
4. 2 : 3

Question Number: 22 Question Id: 469750622 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
If the lengths of sides of a right-angled triangle are consecutive positive integers, then find the radius of the circle passing through the three vertices of the triangle.

Options:
2 units
1. ✔ 2 units
2. 2.5 units
2. ✔ 2.5 units
1.5 units
3. 1.5 units
Question Number : 23 Question Id : 469750623 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
An equilateral triangle has an area $16\sqrt{3}$ cm$^2$. What is its height?

Options :
1. 4 cm
2. $2\sqrt{3}$ cm
3. $4\sqrt{2}$ cm
4. $4\sqrt{3}$ cm

Question Number : 24 Question Id : 469750624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
Three sides of a triangle are 8, 6 and 10 units long. A circle circumscribes this triangle. What is the length of the radius of the circle?

Options :
1. 5 units
2. 4 units
3. 3 units
4. 2 units

Question Number : 25 Question Id : 469750625 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
Triangles ABC and PQR are similar and the ratio of their areas is 324 : 361. What is the ratio of lengths of their corresponding medians?

Options :
1. 18 : 19
2. 19 : 18
3. 17 : 18
4. 18 : 17

Question Number : 26 Question Id : 469750626 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

Triangles ABC and PQR are similar and the ratio of their areas is 64 : 100. If AB = 4 cm, then find the perimeter of the rectangle whose one side is twice the length of PQ and other side is half the length of PQ.

Options:
1. 25 cm
2. 26 cm
3. 27 cm
4. 24 cm

Question Number : 27 Question Id : 469750627 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

Triangles ABC and PQR are similar and the ratio of the angle bisectors of angle A and angle P is 3 : 4. Find the ratio of areas of circle having thrice the area of triangle PQR and to the area of triangle ABC.

Options:
1. 9 : 16
2. 16 : 3
3. 25 : 9
4. 9 : 25

Question Number : 28 Question Id : 469750628 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
In a triangle ABC, AD is the median on side BC. If AB = 5 cm, AC = 5 cm and AD = 3 cm, what is the length of BD?

Options:
1. ✔ 4 cm
2. ✗ 3 cm
3. ✗ 5 cm
4. ✗ 6 cm

Question Number : 29 Question Id : 469750629 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

A circle of radius 5 cm is inscribed in a triangle. If the sum of the sides of the triangle is 32 cm, then what is the area of the triangle?

Options:
1. ✗ 160 cm²
2. ✔ 80 cm²
3. ✗ 40 cm²
4. ✗ 48 cm²

Question Number : 30 Question Id : 469750630 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The area of an equilateral triangle ABC is 84 cm². If the centroid of the triangle is at G, then find the area of the triangle AGC.

Options:
1. ✔ 28 cm²
2. ✗ 10 cm²
3. ✗ 15 cm²
4. ✗ 24 cm²
An angle is half of its complementary angle. These two angles and another angle C form three angles of a triangle. Find the measure of angle C.

Options:
1. ✗ 80°
2. ✔ 90°
3. ✗ 100°
4. ✗ 70°

Question Number : 32 Question Id : 469750632 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
ABCD is a quadrilateral in which AB = AD, BC = CD, ∠B and ∠D are right angles. If ∠CAD = 50°, then ∠BCD is equal to:

\[ AB = AD, \ BC = CD, \ ∠B = 90°, \ ∠D = 90°, \ \text{so} \ ABCD \ \text{is a kite}. \ \angle CAD = 50° \ \text{and} \ ∠BCD = \angle CAD. \]

Options:
1. ✗ 40°
2. ✗ 50°
3. ✔ 80°
4. ✗ 100°

Question Number : 33 Question Id : 469750633 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
Circles are inscribed in two similar triangles ABC and PQR. If their radii are in the ratio 6 : 7, then find the ratio of the corresponding sides of the triangles PQR and ABC.

\[ \text{ABC in}\ \text{similar to}\ \text{PQR and their radii are in the ratio 6 : 7.}\ \text{If}\ \angle CAD = 50°,\ \angle BCD = 80°.\]

Options:
1. ✗ 49 : 36
2. ✗ 36 : 49
3. ✔ 7 : 6
4. ✗ 6 : 7

Question Number : 34 Question Id : 469750634 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a triangle ABC, AD is a median and G is a point on AD such that AG : GD = 3 : 5. Area of triangle (BGD) : Area of triangle (ABG) is:
ABC పుట్టడని, AD కొట్టడు పాటు గ్రామం G కొట్టడు AG: GD = 3 : 5 అయితే AD పాటు గ్రామం. ప్రాంతం (BGD) విశేషానికి, ప్రాంతం (ABG) విశేషానికి ఎలా?
Options :
1. ✓ 5 : 3
2. ✗ 3 : 8
3. ✗ 5 : 8
4. ✗ 3 : 5

Question Number : 35 Question Id : 469750635 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a triangle ABC, D and E are points on sides AB and BC, respectively such that DE is parallel to AC and BE : EC = 2 : 3. The ratio of area of triangle BDE to area of trapezium ADEC is:
ABC పుట్టడని, DE కొట్టడు AC కోచే పాటు BC కోచే BE : EC = 2 : 3 అయితే D కొట్టడు E కొట్టడు వాటి మధ్య పరిమాణం AB నుండి BC వరకు విస్త్రీతి. ప్రాంతం BDE విశేషానికి, ప్రాంతం ADEC విశేషానికి ఎలా?
Options :
1. ✓ 4 : 21
2. ✗ 5 : 21
3. ✗ 21 : 4
4. ✗ 5 : 29

Question Number : 36 Question Id : 469750636 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a triangle PQR, point S is on the side PQ. Point T is on the side PR such that QRTS is a trapezium. It is also given that ST : QR = 3 : 5. Find the ratio of the areas of triangle PST and the trapezium QRTS.
PQ పుట్టడని, S కొట్టడు PQ కోచే పాటు. QRTS ప్రాంతం లేదా పాటు పాటు పాటు పాటు పాటు పాటు పాటు పాటు పాటు (ప్రాంతాలు) అయితే T కొట్టడు ప్రాంతం PR నుండి విస్తీతి. ST : QR = 3 : 5 అయితే పరిమాణాలు వాటి మధ్య పరిమాణం (ప్రాంతాలు) QRTS విశేషానికి ఎలా?
Options :
1. ✗ 1 : 4
2. ✗ 3 : 5
3. ✓ 9 : 16
4. ✗ 9 : 25
Question Number : 37 Question Id : 469750637 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

ABCD is a parallelogram. O is a point in its interior. Area of the parallelogram is 120 cm². What is the sum of areas of triangles OAB and ODC?

ABCD is a parallelogram. O is a point in its interior. Area of the parallelogram is 120 cm². What is the sum of areas of triangles OAB and ODC?

Options :
1. ✗ 90 cm²
2. ✓ 60 cm²
3. ✗ 45 cm²
4. ✗ 75 cm²

Question Number : 38 Question Id : 469750638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The volume of a cone is $100\pi$ cm³ and its height is 12 cm. What will be its radius?

The volume of a cone is $100\pi$ cm³ and its height is 12 cm. What will be its radius?

Options :
1. ✗ 6 cm
2. ✓ 5 cm
3. ✗ 8 cm
4. ✗ 9 cm

Question Number : 39 Question Id : 469750639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

If the diameters of two cones are equal and the ratio of their slant heights is 6 : 7, then what is the ratio of their curved surface areas?

If the diameters of two cones are equal and the ratio of their slant heights is 6 : 7, then what is the ratio of their curved surface areas?

Options :
1. ✗ 6 : 8
2. ✓ 6 : 7
3. ✗ 7 : 6
4. ✗ 5 : 7
The curved surface area of a cone is 2376 cm² and its slant height is 18 cm. What is the radius of the base of the cone?

Options:
1. ☑ 42 cm
2. ✗ 52 cm
3. ✗ 62 cm
4. ✗ 72 cm

If the radius of a cylinder is increased by 25%, then what will be the percentage increase in its curved surface area?

Options:
1. ✗ 20
2. ☑ 25
3. ✗ 35
4. ✗ 40

The ratio of radii of a cylinder and a cone is 1 : 3 and their height are same. What will be the ratio of their volumes?

Options:
1. ☑ 1 : 3
2. ✗ 2 : 3
3. ✗ 4 : 3
4. ✗ 5 : 3
A sphere and a cone have the same volume and the same radius \( r \). What will be the height of the cone?

\[ 
\frac{4}{3} \pi r^3 = \frac{1}{3} \pi r^2 h \\
4r = h
\]

Options:
1. \( 2r \)
2. \( 4r \)
3. \( r/3 \)
4. \( 2r/3 \)

---

What will be the ratio of the curved surface area and the total surface area of a conical flask whose radius is 6 cm and height is 8 cm?

\[ 
\frac{\text{Curved Surface Area}}{\text{Total Surface Area}} = \frac{\pi rl}{\pi (l^2 + r^2)}
\]

Options:
1. \( 5 : 8 \)
2. \( 6 : 8 \)
3. \( 7 : 8 \)
4. \( 9 : 8 \)

---

A cone and a hemisphere have equal bases and equal volumes. What is the ratio of their heights?

\[ 
\frac{\text{Height of Cone}}{\text{Height of Hemisphere}} = \frac{h_c}{h_h} = \frac{3}{1}
\]

Options:
1. \( 1 : 2 \)
2. \( 2 : 1 \)
3. \( 3 : 1 \)
4. \( 4 : 1 \)

---

A cone and a hemisphere have equal bases and equal volumes. What is the ratio of their heights?

\[ 
\frac{\text{Height of Cone}}{\text{Height of Hemisphere}} = \frac{h_c}{h_h} = \frac{3}{1}
\]

Options:
1. \( 1 : 2 \)
2. \( 2 : 1 \)
3. \( 3 : 1 \)
4. \( 4 : 1 \)
V represents the volume of a sphere and S its total surface area. If radius of the sphere is 7 cm, then what is the value of 
\( \frac{S}{V} \)?

Options:
1. \( \checkmark \) 3/7
2. \( \times \) 4/7
3. \( \times \) 3/14
4. \( \times \) 6/7

Question Number: 47 Question Id: 469750647 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

Ram has a hollow sphere of external and internal diameters 6 cm and 4 cm, respectively. He wants this sphere to be melted to form a solid cone of radius 4 cm. What will be the height of the cone?

Options:
1. \( \checkmark \) 4.75 cm
2. \( \times \) 9.5 cm
3. \( \times \) 19 cm
4. \( \times \) 38 cm

Question Number: 48 Question Id: 469750648 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

If the curved surface area of a cone is 4 times that of second cone and slant height of second cone is 4 times that of the first cone, then what will be the ratio of areas of their bases?

Options:
1. \( \times \) 16 : 1
2. \( \times \) 4 : 1
3. \( \times \) 1 : 16
4. \( \checkmark \) 256 : 1

Question Number: 49 Question Id: 469750649 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33
If the lateral surface area of a prism is 88 cm² and the perimeter of its base is 11 cm, find its height.

88 cm² = \text{Lateral Surface Area of Prism}
11 cm = \text{Perimeter of Base}

Options:
1. ✓ 8 cm
2. ✗ 16 cm
3. ✗ 4 cm
4. ✗ 12 cm

Question Number: 50 Question Id: 469750650 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33
If 'a' represents the curved surface area of a cylinder and 'b' represents the volume of the same cylinder having radius 28 cm, then what will be the value of b/a?

\[ a = 2\pi rh, \quad b = \pi r^2 h \]
\[ \text{Find } \frac{b}{a} \text{ when } r = 28 \text{ cm} \]

Options:
1. ✓ 14 cm
2. ✗ 7 cm
3. ✗ 21 cm
4. ✗ 28 cm

Question Number: 51 Question Id: 469750651 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33
A solid cone A is melted and half of the melted part is used to make a new cone B. If cone B has the base area 4 times that of the cone A, then find the ratio of the height of the cone A to the height of the cone B.

\[ \frac{1}{2} \text{ of cone A melted to make cone B} \]
\[ \text{Area of base of B} = 4 \times \text{Area of base of A} \]
\[ \text{Find ratio of heights of A to B} \]

Options:
1. ✓ 8 : 1
2. ✗ 1 : 2
3. ✗ 1 : 3
4. ✗ 1 : 8

Question Number: 52 Question Id: 469750652 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks : 1 Wrong Marks : 0.33
Ram is trying to form the largest cone at the base of a cube of side 7 cm. What will be the ratio of the volume of the cone to that of the cube?

Options:
1. ✗ 42 : 11
2. ✔ 11 : 42
3. ✗ 42 : 12
4. ✗ 43 : 12

Question Number : 53 Question Id : 469750653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
The perimeter of the base of a right prism is 22 cm and its height is 6 cm. It is also given that its whole surface area is 152 cm². What is the area of its two plane ends?

Options:
1. ✔ 20 cm²
2. ✗ 10 cm²
3. ✗ 15 cm²
4. ✗ 25 cm²

Question Number : 54 Question Id : 469750654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
A solid wooden toy is in the shape of a right circular cone surmounted on a hemisphere. If the radius of the hemisphere is 4.2 cm and total height of the toy is 10.2 cm, what is the volume of the wooden toy in cm³?

Options:
1. ✗ 162.102
2. ✗ 104.121
3. ✗ 427.112
4. ✔ 266.112
There is a vessel in the form of an open inverted cone with height 8 cm and base radius 5 cm. It is filled up with water up to the brim. When spherical bullets with diameter 1 cm are dropped into the vessel, half of the water comes out. What is the number of bullets dropped into the vessel?

Options:
1. 100
2. 150
3. 200
4. 250

Some water droplets (assume them to be solid spheres of equal size) merge in the air to become a single drop. If the sum of the surface areas of all the droplets is 10 times the surface area of the single merged drop, then the number of droplets is:

Options:
1. 100
2. 1000
3. 10
4. 10000

Total number of common tangents to two circles if they touch externally is:

Options:
1. 2
2. 3
3. 4
Question Number: 58 Question Id: 469750658 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33

The distance between two equal parallel chords of a circle is 8 cm and radius of the circle is 5 cm. What is the length of these chords?

Options:
1. ✔ 6 cm
2. ✗ 5 cm
3. ✗ 7 cm
4. ✗ 8 cm

Question Number: 59 Question Id: 469750659 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33

Find the area of the sector of a circle having radius 14 cm which is subtending an angle of 45° at the centre.

Options:
1. ✗ 154 cm²
2. ✔ 77 cm²
3. ✗ 231 cm²
4. ✗ 11 cm²

Question Number: 60 Question Id: 469750660 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical
Correct Marks: 1 Wrong Marks: 0.33

Circle with centre A and radius 2 cm touches the circle with centre B and radius 5 cm externally. QR is a common tangent to the circles. Points Q and R are the points of contact with the circles having centre A and centre B, respectively. If QR intersects the line through A and B at point C, then CA : CB is:

Options:
1. ✗ 2 : 3
2. ✔ 2 : 5
3. 2 : 2.5
4. 5 : 7

Question Number: 61 Question Id: 469750661 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Two circles each of radius 6 cm have a transverse common tangent of length 5 cm. What is the distance between the centres of these circles?

Options:
1. 12 cm
2. 13 cm
3. 14 cm
4. 15 cm

Question Number: 62 Question Id: 469750662 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
If two concentric circles are of radii 10 cm and 6 cm, then the length of the chord of the larger circle which touches the smaller circle is:

Options:
1. 16 cm
2. 12 cm
3. 8 cm
4. 10 cm

Question Number: 63 Question Id: 469750663 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Two intersecting circles have a common chord of length 24 cm. If the radii of the circles are 15 cm and 13 cm, then what is the distance between the centres?

Options:
1. 13 cm
2. 14 cm
3. 15 cm
4. 16 cm

Question Number: 64 Question Id: 469750664 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Two equal circles with centres O and P intersect each other at A and B. If OP = 24 cm and AB = 18 cm, then the radius of the circles is:

O మధ్యంలో ప్యాం మధ్యంలో అంతే అత్యంతే అత్యంతే A మధ్యంలో B మధ్య అర్ధంతరం వండిపోయింది. OP = 24 cm అంతే
AB = 18 cm అంతే, అంతే అంతే అంతే అంతే:

Options:
1.✓ 15 cm
2. 12 cm
3. 9 cm
4. 16 cm

Question Number: 65 Question Id: 469750665 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Chord length ‘L’ of a circle is 8 cm and its perpendicular distance from the centre is 3 cm. Find the value of \( L^2 + r^2 \) where ‘r’ is the radius of the circle.

లు అంతే వెలుగు లు అంతే 8 cm అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే 3 cm. ‘r’ అంతే అంతే అంతే వెలుగు లేదు, \( L^2 + r^2 \) అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే:

Options:
1. ✗ 79 cm²
2.✓ 89 cm²
3. ✗ 69 cm²
4. ✗ 99 cm²

Question Number: 66 Question Id: 469750666 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Two chords of a circle are of lengths ‘a’ unit and ‘b’ unit. Angles subtended by the two chords at the centre are 90° and 60°, respectively. Which of the following relations is TRUE?

ఇతరులు వెలుగులు లేదా అంతే అంతే అంతే అంతే అంతే ‘a’ అంతే వెలుగులు అంతే అంతే అంతే అంతే అంతే ‘b’ అంతే అంతే అంతే వెలుగులు అంతే అంతే అంతే అంతే అంతే అంతే 90° అంతే అంతే అంతే 60°, అంతే అంతే వెలుగులు అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే అంతే:

Options:
1.✓ \( a = \sqrt{2} b \)
2. \( b = \sqrt{2}a \)

3. \( a = b \)

4. \( a = b/2 \)

Question Number : 67 Question Id : 469750667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
Find the length of major arc of the circle if angle subtended by the minor arc at the centre is 45° and radius of the circle is 21 cm?

సూక్ష్మ రేఖ వంటి కోణం కేంద్రంలో సూక్ష్మ రేఖ వంటి కోణం గా ప్రతిభించిన కోణం 45° అంటే సూక్ష్మ రేఖ వంటి కోణం గా ప్రతిభించిన కోణం 21 సెం.మీ. సూక్ష్మ రేఖ వంటి కోణం గా ప్రతిభించిన కోణం ఎంత?

Options :
1. 115.5 cm
2. 120.5 cm
3. 130.5 cm
4. 122.5 cm

Question Number : 68 Question Id : 469750668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
In a circle, length of the chord AB is equal to the radius of the circle. If a point C lies in the minor arc, then find the measure of angle ACB.

ఒక వృత్తంలో రేఖ వంటివస్తు AB రేఖ వంటివస్తు చుట్టు వంటివస్తు ఎక్కడు కేంద్రంలో సూక్ష్మ రేఖ వంటి కోణం కేంద్రంలో సూక్ష్మ రేఖ వంటి కోణం ఎంత?

Options :
1. 60°
2. 150°
3. 45°
4. 120°

Question Number : 69 Question Id : 469750669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0.33
What will be the radius of a circle which is inscribed in a triangle having sides 15 cm, 8 cm and 17 cm?

15 cm, 8 cm మరియు 17 cm నుండి తెగానికి కొని ఉండేవాటి 15 సెమిమీటర్లు, 8 సెమిమీటర్లు, 17 సెమిమీటర్లు ఉండవచ్చు వేస్తుంది?

Options :
1. 3 cm
2. **4 cm**
3. **5 cm**
4. **6 cm**

**Question Number:** 70  **Question Id:** 469750670  **Question Type:** MCQ  **Option Shuffling:** Yes  **Display Question Number:** Yes  **Is Question Mandatory:** No  **Single Line Question Option:** No  **Negative Marks:** Display Text: 1/3  **Option Orientation:** Vertical  **Correct Marks:** 1  **Wrong Marks:** 0.33

Radii of two circles are 3 cm and 4 cm and they touch each other internally. What is the length of the longest chord of greater circle which is outside the inner circle? (Value of square root 3 is to be taken up to 2 decimal places).

 opciones 3 cm and 4 cm and they touch each other internally. What is the length of the longest chord of greater circle which is outside the inner circle? (Value of square root 3 is to be taken up to 2 decimal places).

**Options:**
1. **3.46 cm**
2. **6.92 cm**
3. **4.2 cm**
4. **5.6 cm**

**Question Number:** 71  **Question Id:** 469750671  **Question Type:** MCQ  **Option Shuffling:** Yes  **Display Question Number:** Yes  **Is Question Mandatory:** No  **Single Line Question Option:** No  **Negative Marks:** Display Text: 1/3  **Option Orientation:** Vertical  **Correct Marks:** 1  **Wrong Marks:** 0.33

A circle touches all the four sides of a quadrilateral ABCD. If AB = BC = 6 cm, AD = 10 cm, then find DC.

 opciones 6 cm, AD = 10 cm, then find DC.

**Options:**
1. **8 cm**
2. **10 cm**
3. **12 cm**
4. **6 cm**

**Question Number:** 72  **Question Id:** 469750672  **Question Type:** MCQ  **Option Shuffling:** Yes  **Display Question Number:** Yes  **Is Question Mandatory:** No  **Single Line Question Option:** No  **Negative Marks:** Display Text: 1/3  **Option Orientation:** Vertical  **Correct Marks:** 1  **Wrong Marks:** 0.33

If the circumradius of an equilateral triangle PQR is 10 cm, then find the length of the altitude of the triangle.

 opciones 10 cm, then find the length of the altitude of the triangle.

**Options:**
1. **9 cm**
2. ✓ 15 cm
3. ✗ 11 cm
4. ✗ 12 cm

The distance between the lines $12x + 9y = 33$ and $16x + 12y = 30$ is:

$$12x + 9y = 33$$
$$16x + 12y = 30$$

Options:
- 4 units
  - ✓ 4 units
- 0.7 unit
  - 0.7 units
- 0.41 unit
  - ✓ 0.41 units
- 26 units
  - ✗ 26 units

If the vertices of a triangle are integral points, then it must NOT be a/an:

Options:
- scalene triangle
  - ✓ scalene triangle
- isosceles triangle
  - ✗ isosceles triangle
- equilateral triangle
  - ✗ equilateral triangle
- right-angled isosceles triangle
  - ✗ right-angled isosceles triangle
What is the value of A if the distance between the points (8, A), (4, 3) is 5 units?
(8, A), (4, 3) ఎద్దుల మధ్య దూర్మైన 5 అవస్థలో అంటే A మీదు చేస్తున్నది?

Options:
1. ✗ 7
2. ✗ 8
3. ✗ 6 or 0
4. ✗ 2

Question Number: 76 Question Id: 469750676 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
What is the reflection of the point (6, 3) in the second quadrant assuming y-axis as the mirror line?
y-కోణానికి దగ్గర పోషక రేఖ, అంటే యాత్రా (సౌత్ రేఖా పోషక రేఖ)లో (6, 3) ఎదుట్లో ఎంతకు పెరిగినది?

Options:
1. ✗ (6, -3)
2. ✗ (-6, 3)
3. ✗ (-3, 6)
4. ✗ (3, 6)

Question Number: 77 Question Id: 469750677 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
Find the value of \( \tan 4^\circ \tan 44^\circ \tan 46^\circ \tan 86^\circ \).
\( \tan 4^\circ \tan 44^\circ \tan 46^\circ \tan 86^\circ \) మీద మూడు శాతిని గణించండి.

Options:
1. ✗ 0
2. ✗ 1
3. ✗ -1
4. ✗ \( \sqrt{3} \)

Question Number: 78 Question Id: 469750678 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33
If \( \sqrt{3} \) \( \cot \theta = 2 \cos \theta \), then find the value of \( \cos^2 \theta - \sin^2 \theta \) where \( 0^\circ < \theta < 90^\circ \).
\( \sqrt{3} \) \( \cot \theta = 2 \cos \theta \) అయితే, \( 0^\circ < \theta < 90^\circ \) మీద కను, \( \cos^2 \theta - \sin^2 \theta \) మీద మూడు శాతిని గణించండి.

Options:
1. $\frac{3}{2}$
2. $-\frac{3}{2}$
3. $\frac{1}{2}$
4. $-\frac{1}{2}$

Question Number: 79 Question Id: 469750679 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

If origin is the midpoint of line segment joining the points $(2, 3)$ and $(x, y)$, what is the value of $x^2 + y^2$?

Options:
1. ✓ 1
2. ✗ -1
3. ✗ 2
4. ✗ -2

Question Number: 80 Question Id: 469750680 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

Which of the following lines passes through the origin and has unit slope?

Options:
1. ✓ $x = y + 2$
2. ✗ $x = 3y$
3. ✓ $x = y$
4. ✗ $x + y = 0$

Question Number: 81 Question Id: 469750681 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

The coordinates of vertices of a triangle are $(4, 2), (3, 3), (2, 2)$. What are the coordinates of its centroid?

Options:
1. ✓ $(3, 4)$
2. ✗ $(3, 3/7)$
3. ✔ (3, 7/3)

4. ✗ (4, 7/3)

Question Number : 82 Question Id: 469750682 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

What will be the coordinates of the foot of perpendicular from (0, 0) to the line \( x + y = 2 \)?

(0, 0) \( x + y = 2 \) యొక్క చతురస్ర పరిధిలో (0, 0) విస్తీర్ణం నుండి లింయా మిశ్రం తద్దే అంచనాం విస్తీర్ణం నుండి లింయా?

Options:

1. ✗ (2, -1)

2. ✗ (-2, 1)

3. ✔ (1, 1)

4. ✗ (1, 2)

Question Number : 83 Question Id: 469750683 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

Find the length of the perpendicular from the point (6, 7) to the line \( 4x + 3y = 10 \).

(6, 7) యొక్క చతురస్ర పరిధిలో (6, 7) విస్తీర్ణం నుండి లింయా మిశ్రం తద్దే అంచనాం విస్తీర్ణం నుండి లింయా?

Options:

1. ✔ 7 units

2. ✗ 8 units

3. ✗ 9 units

4. ✗ 6 units

Question Number : 84 Question Id: 469750684 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

Find the value of \( \cos^2 2^\circ + \cos^2 4^\circ + \cos^2 6^\circ + \ldots + \cos^2 90^\circ \).

\( \cos^2 2^\circ + \cos^2 4^\circ + \cos^2 6^\circ + \ldots + \cos^2 90^\circ \) యొక్క చతురస్ర పరిధిలో నుండి లింయా?

Options:

1. ✔ 22
Question Number : 85 Question Id : 469750685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

If \(4 - 2\sin^2\theta - 5\cos\theta = 0, 0^\circ < \theta < 90^\circ\), then find \(\tan\theta\).

\[4 - 2\sin^2\theta - 5\cos\theta = 0, 0^\circ < \theta < 90^\circ\]  
\[\therefore \tan\theta = \text{some value}\]

Options :
1. \(\sqrt{3}\)
2. \(1/\sqrt{3}\)
3. \(\sqrt{3}\)
4. \(0\)

Question Number : 86 Question Id : 469750686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

What will be the area of the triangle whose vertices are \((p, q + r), (p, q - r)\) and \((-p, r)\) when \(p, q\) and \(r > 0\)?

\(p, q > 0\)  
\((-p, r)\)  
\((p, q + r), (p, q - r)\)  
\(\text{Area} = \text{some value}\)

Options :
1. \(2pr \text{ sq unit}\)
2. \(2p \text{ sq unit}\)
3. \(2q \text{ sq unit}\)
4. \(2r \text{ sq unit}\)

Question Number : 87 Question Id : 469750687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

If the points \((p, 0), (0, q), (1, 1)\) are collinear, then which of the following relations holds TRUE?

\((p, 0), (0, q), (1,1)\)  
\(\text{some condition}\)

Options :
1. \( \frac{1}{p} + \frac{1}{q} = 2 \)

2. \( \frac{1}{p} - \frac{1}{q} = 2 \)

3. \( \frac{1}{p} + \frac{1}{q} = 1 \)

4. \( \frac{1}{p} - \frac{1}{q} = 1 \)

**Question Number :** 88  **Question Id :** 469750688  **Question Type :** MCQ Option Shuffling  **Yes Display**  **Question Number :** Yes  **Is Question Mandatory :** No  **Single Line Question Option :** No  **Negative Marks Display Text :** 1/3  **Option Orientation :** Vertical  **Correct Marks :** 1  **Wrong Marks :** 0.33

Length of the perpendicular from the point (0, 0) to the line \( \frac{x}{p} + \frac{y}{q} = 1 \) is \('L\'). Which of the following relations holds TRUE?

\((0, 0)\) ను కాదు \( \frac{x}{p} + \frac{y}{q} = 1 \) ను పరిమిత లాంతికంగా వివరించి, తేది నియోగించండి?

**Options :**

1. \( \frac{1}{L^2} = \frac{1}{p^2} + \frac{1}{q^2} \)

2. \( \frac{1}{L^2} = \frac{1}{p^2} - \frac{1}{q^2} \)

3. \( \frac{2}{L^2} = \frac{1}{p^2} + \frac{1}{q^2} \)

4. \( \frac{2}{L^2} = \frac{1}{p^2} - \frac{1}{q^2} \)

**Question Number :** 89  **Question Id :** 469750689  **Question Type :** MCQ Option Shuffling  **Yes Display**  **Question Number :** Yes  **Is Question Mandatory :** No  **Single Line Question Option :** No  **Negative Marks Display Text :** 1/3  **Option Orientation :** Vertical  **Correct Marks :** 1  **Wrong Marks :** 0.33

Two sides of a square lie on the lines \( x + y = 4 \) and \( x + y = -4 \). The third side lies on the line perpendicular to the given lines. What is the area of the square?

వర్గం యొక్క రెండు పొడవులు \( x + y = 4 \) మరియు \( x + y = -4 \) లో ఉన్నాయి. తిని పొడవు అనేక తలలో ఉన్నది. వేసిన విధానం యొక్క రెండు పొడవుల నియోగించండి?

**Options :**

1. 64 sq unit

2. 16 sq unit
Question Number : 90 Question Id : 469750690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
The area of a rectangular field having one side 40 m and one diagonal 41 m is:

Options :
1. ☑ 94 m²
2. ☐ 180 m²
3. ☐ 360 m²
4. ☐ 1640 m²

Question Number : 91 Question Id : 469750691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
If the area of a square is 32 m², then the length of its diagonal will be:

Options :
1. ☑ 4√2 m
2. ☐ 8 m
3. ☐ 16 m
4. ☐ 4 m

Question Number : 92 Question Id : 469750692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
In a trapezium, the parallel sides are 16 cm and 20 cm long. If the area of the trapezium is 144 cm², then the distance between the parallel sides is:

Options :
1. ☑ 8 cm
2. ☐ 4 cm
3. **2 cm**

4. **9 cm**

**Question Number : 93** Question Id : 469750693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

In the following figure, ABCD is a trapezium with AB\parallel CD. The area of the trapezium is:

![Diagram of a trapezium ABCD]

Options :
1. **39 cm²**
2. ✓ **54 cm²**
3. **90 cm²**
4. **108 cm²**

**Question Number : 94** Question Id : 469750694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The area of a square floor is 45 m². The floor is fully covered by 80 square tiles of equal size. The side of each tile is:

![Diagram of a square floor]

Options :
1. **0.75 cm**
2. **7.5 cm**
3. ✓ **75 cm**
4. **133 cm**

**Question Number : 95** Question Id : 469750695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The height of a parallelogram is 3 times its base. If its area is 147 cm², then the height of the parallelogram is:

![Diagram of a parallelogram]

Options :
1. 7 cm
2. ✔ 21 cm
3. 49 cm
4. 21\sqrt{2} cm

**Question Number : 96**
**Question Id : 469750696**  
**Question Type : MCQ Option Shuffling : Yes**  
**Display Question Number : Yes**  
**Is Question Mandatory : No**  
**Single Line Question Option : No**  
**No Negative Marks Display Text : 1/3**  
**Option Orientation : Vertical**  
**Correct Marks : 1**  
**Wrong Marks : 0.33**  

A Gardner wants to fence a rectangular garden whose breadth is 18 m and area is 216 m². If he makes 4 rounds of the fence, then the length of the barbed wire he needs to purchase is:

\[ 18 \times \text{length} = 216 \text{ m}^2 \]  
\[ \text{length} = \frac{216}{18} = 12 \text{ m} \]

He makes 4 rounds of the fence:

\[ 4 \times 12 = 48 \text{ m} \]

**Options :**
1. ✗ 60 m
2. ✗ 120 m
3. ✔ 240 m
4. ✗ 1728 m

**Question Number : 97**
**Question Id : 469750697**  
**Question Type : MCQ Option Shuffling : Yes**  
**Display Question Number : Yes**  
**Is Question Mandatory : No**  
**Single Line Question Option : No**  
**No Negative Marks Display Text : 1/3**  
**Option Orientation : Vertical**  
**Correct Marks : 1**  
**Wrong Marks : 0.33**  

The area of the base of a rectangular tank is 245 m². If the adjacent sides of the base of the tank are in the ratio 4 : 5, then the perimeter of the base is:

\[ \text{length} \times \text{breadth} = 245 \text{ m}^2 \]  
\[ \text{length} : \text{breadth} = 4 : 5 \]

\[ \text{length} = \frac{4}{5} \times \text{breadth} \]

\[ \text{breadth} = \frac{5}{4} \times \text{length} \]

\[ \text{perimeter} = 2(\text{length} + \text{breadth}) \]

\[ \text{perimeter} = 2\left(\frac{4}{5} \times \text{breadth} + \frac{5}{4} \times \text{length}\right) \]

\[ \text{perimeter} = 2\left(\frac{4}{5} \times \frac{5}{4} \times \text{length} + \frac{5}{4} \times \text{length}\right) \]

\[ \text{perimeter} = 2\left(\frac{9}{4} \times \text{length}\right) \]

\[ \text{perimeter} = \frac{9}{2} \times \text{length} \]

**Options :**
1. ✗ 18 m
2. ✔ 63 m
3. ✗ 245 m
4. ✗ 220.5 m

**Question Number : 98**
**Question Id : 469750698**  
**Question Type : MCQ Option Shuffling : Yes**  
**Display Question Number : Yes**  
**Is Question Mandatory : No**  
**Single Line Question Option : No**  
**No Negative Marks Display Text : 1/3**  
**Option Orientation : Vertical**  
**Correct Marks : 1**  
**Wrong Marks : 0.33**
In the given figure, ABCD is a rectangle and BCEF is a parallelogram. If BC = 12 cm, CD = 8 cm and D is the midpoint of EF, then the perimeter of the parallelogram BCEF is:

Options:
1. ✓ 44 cm
2. ✗ 40 cm
3. ✗ 48 cm
4. ✗ 36 cm

Question Number: 99 Question Id: 469750699 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

The perimeters of two squares are 60 m and 32 m. If the area of a third square is equal to the sum of the areas of the two given squares, then the perimeter of the third square is:

Options:
1. ✗ 17 cm
2. ✗ 23 cm
3. ✓ 68 cm
4. ✗ 92 cm

Question Number: 100 Question Id: 469750700 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

The area of a trapezium with parallel sides 17 cm and 35 cm and the non-parallel sides of length 15 cm each is:

Options:
1. ✗ 108 cm²
2. ✓ 312 cm²
3. ✗ 390 cm²
4. ✗ 420 cm²
In a parallelogram, the ratio between a side and its corresponding altitude is 2 : 3 and its area is 24 cm². If the other altitude of the parallelogram is 4 cm, then its perimeter will be:

\[ \frac{\text{side}}{\text{altitude}} = \frac{2}{3} \Rightarrow \text{side} = \frac{2}{3} \times 4 \times 2 = \frac{16}{3} \text{ cm} \]

Options:
1. ✗ 16 cm
2. ✓ 20 cm
3. ✗ 24 cm
4. ✗ 10 cm

A square park has an area of 1000 m². A path of width 3 m is made all around inside the park. The cost of tiling the path at the rate of ₹ 150/m² is:

\[ \text{Area of path} = \text{Area of square} - \text{Area of inner square} = 1000 - (1000 - 6)^2 = 156 \text{ m}^2 \]

\[ \text{Cost} = 156 \times 150 = 23400 \text{ ₹} \]

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

Options:
1. ₹ 8,865
2. ₹ 88,650
3. ₹ 91,350
4. ₹ 1,74,600

ΔABC and ΔDEF have perimeter 40 cm and 30 cm respectively. If ΔABC ∼ ΔDEF and EF = 12 cm, then the length of BC is:

ΔABC होतेच, ΔDEF होतेच 40 cm असेल, 30 cm असेल, तर भागीला, ΔABC ∼ ΔDEF होतेच EF = 12 cm असेल. तर BC भागीला असेल?

Options:
1. ✓ 16 cm
2. $9 \text{ cm}$

3. $8\sqrt{3} \text{ cm}$

4. $21 \text{ cm}$

**Question Number : 104 Question Id : 469750704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33**

In the given figure, $OC = 3 \text{ cm}$ and $OD = 5 \text{ cm}$, $DA$ and $CB$ are perpendicular to $AB$. If the area of $\Delta BOC = 162 \text{ cm}^2$, then the area of $\Delta AOD = \ ?$


cේජිඩෝ ආශ්ජිප්තත්, $OC = 3 \text{ cm}$ සහ $OD = 5 \text{ cm}$, $DA$ සහ $CB$ ආශ්ජිප් $AB$ ආශ්ජිප්. $\Delta BOC$ මතාකාරයක් $162 \text{ cm}^2$ යනුෂය, එයින් බෝට $\Delta AOD$ මතාකාරයක් මතාකාරයක්?

![Diagram](image)

**Options :**

1. $270 \text{ cm}^2$

2. $216 \text{ cm}^2$

3. $58.32 \text{ cm}^2$

4. $450 \text{ cm}^2$

**Question Number : 105 Question Id : 469750705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33**

In the figure, $DE \parallel BC$ and $\frac{AD}{BD} = \frac{AE}{GE} = \frac{1}{2}$. What is the ratio between $DE$ and $BC$?


cේජිඩෝ ආශ්ජිප් $DE \parallel BC$ සහ $\frac{AD}{BD} = \frac{AE}{GE} = \frac{1}{2}$. $DE$ සහ $BC$ මතාකාරයක් මතාකාරයක් ක්‍රියා?

![Diagram](image)

**Options :**

1. $1:2$

2. $2:1$

3. $1:3$

4. $3:1$

**Question Number : 106 Question Id : 469750706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is**
ΔABC ≅ ΔRPQ. If AB = 6 cm, ∠A = 70° and ∠B = 50°, then which one of the following is TRUE?

ΔABC ≅ ΔRPQ. AB = 6 cm, ∠A = 70°, ∠B = 50°. Which one of the following is TRUE?

Options:
1. ✗ PR = 6 cm, ∠R = 60°
2. ✗ PQ = 6 cm, ∠Q = 60°
3. ✗ PQ = 6 cm, ∠P = 50°
4. ✓ PR = 6 cm, ∠Q = 60°

The altitude of an equilateral triangle with side 18 cm is:

The altitude of an equilateral triangle with side 18 cm is:

Options:
1. ✗ 9 cm
2. ✓ 9√3 cm
3. ✗ 9√5 cm
4. ✗ 81√3 cm

In the figure, if ∠BAC = ∠ADB, AB = 10 cm and BD = 4 cm, then the length of CD is:

In the figure, if ∠BAC = ∠ADB, AB = 10 cm, BD = 4 cm, then the length of CD is:

Options:
1. ✗ 14 cm
2. ✗ 29 cm
3. ✗ 10 cm
4. ✓ 21 cm
Correct Marks : 1 Wrong Marks : 0.33

ABCD is a trapezium such that AB || CD and 2 AB = 3 CD. If its diagonals intersect at O, then the ratio of the area of \( \Delta AOB \) to that of \( \Delta COD \) is:

\[ \frac{\text{Area of } \Delta AOB}{\text{Area of } \Delta COD} = \frac{3}{2} \]

Options :
1. * 3 : 2
2. ✓ 9 : 4
3. ✗ 4 : 9
4. ✗ 2 : 3

Question Number : 110 Question Id : 469750710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0.33

In \( \triangle ABC \), D and E are points on AB and AC respectively such that DE || BC. If AD = 8 cm, DB = 6 cm and AC = 7 cm, then the length of AE is:

\[ \frac{\text{Area of } \Delta ADE}{\text{Area of } \Delta ABC} = \frac{21}{4} \]

Options :
1. ✗ 4 cm
2. ✗ 3 cm
3. ✗ 3 cm
4. ✓ 4 cm

Question Number : 111 Question Id : 469750711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0.33

In the figure, ABCD is a square. F is the midpoint of AD. AE is two-third of AB. If area of \( \Delta AEF \) = 54 cm\(^2\), then the length of BD is:

[Diagram of a square ABCD with AE given as two-thirds of AB, and F as the midpoint of AD.]

\[ \text{Area of } \Delta AEF = 54 \text{ cm}^2 \]

Options :
1. ✗ 9\sqrt{2} \text{ cm}

2. ✗ 4 \text{ cm}
3. ✗ 3 \text{ cm}
4. ✓ 4 \text{ cm}
2. 36 cm
3. 18 cm
4. $18\sqrt{2}$ cm

Question Number : 112
Question Id : 469750712
Question Type : MCQ
Option Shuffling : Yes
Display Question Number : Yes
Is Question Mandatory : No
Single Line Question Option : No
Negative Marks Display Text : 1/3
Option Orientation : Vertical
Correct Marks : 1
Wrong Marks : 0.33

In the figure, DE || BC. If the area (ΔADE) = 40 cm², then the area of the trapezium BCED is:

$$\text{Area of } \triangle ADE = 40 \text{ cm}^2 \Rightarrow \text{Area of } \triangle BCD = 320 \text{ cm}^2$$

Options :
1. $80 \text{ cm}^2$
2. $120 \text{ cm}^2$
3. $320 \text{ cm}^2$
4. $360 \text{ cm}^2$

Question Number : 113
Question Id : 469750713
Question Type : MCQ
Option Shuffling : Yes
Display Question Number : Yes
Is Question Mandatory : No
Single Line Question Option : No
Negative Marks Display Text : 1/3
Option Orientation : Vertical
Correct Marks : 1
Wrong Marks : 0.33

In the figure, if ΔABC : ΔDEF and their sides are of lengths (in cm) as marked along them, then the area of ΔDEF is:

$$\text{ΔABC}: \text{ΔDEF} \Rightarrow \text{Area of } \triangle DEF = 6\sqrt{5} \text{ cm}^2$$

Options :
1. $6\sqrt{5} \text{ cm}^2$
2. $12\sqrt{5} \text{ cm}^2$
3. $24\sqrt{5} \text{ cm}^2$

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.
4. $18\sqrt{5}$ cm$^2$

Question Number : 114 Question Id : 469750714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

A cylinder, a cone and a hemisphere stand on equal bases and have equal heights. The ratio of the volumes of the cylinder, the cone and the hemisphere is:

Options :
1. ✓ $3 : 1 : 2$
2. ✗ $1 : 3 : 2$
3. ✗ $3 : 1 : 4$
4. ✗ $3 : 2 : 1$

Question Number : 115 Question Id : 469750715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

A solid metallic cone of height 16 cm and radius 4 cm is melted and recasted into a sphere. The radius of the sphere is:

Options :
1. ✓ 4 cm
2. ✗ 8 cm
3. ✗ $4\sqrt{2}$ cm
4. ✗ $4\sqrt{3}$ cm

Question Number : 116 Question Id : 469750716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

A semicircular sheet of paper of radius 14 cm is bent in the form of an open cone. The radius of the cone so formed is:

Options :
1. ✓ 7 cm
2. ✗ 14 cm
3. ✗ 3.5 cm
Two identical solid hemispheres with radius ‘r’ cm are joined together along their base. The total surface area of the new solid formed is:

Options:
1. 6 πr²
2. 5 πr²
3. 4 πr²
4. 3 π²

If the radius of the base and height of a right circular cylinder are each increased by 30%, then the volume of the cylinder will increase by:

Options:
1. 2.197 %
2. ✔️ 119.7 %
3. 1.197 %
4. ✔️ 219.7 %

A metallic sphere of diameter 12 cm is melted and made into a uniform circular wire of diameter 3 mm. The length of the wire so formed is:

Options:
1. ✗ 1.28 m
2. ✔️ 128 m
3. ✗ 256 m
4. \[1280 \text{ m} \]

Question Number: 120 Question Id: 469750720 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

A cylindrical vessel has a hemispherical portion raised upward at the bottom. If the radius of the base is 3.5 cm and the height of the vessel is 20 cm, then the capacity of the cylindrical vessel is: (use \( \pi = \frac{22}{7} \))

\[
\frac{3542}{6} \text{ cm}^3
\]

Options:
1. \(\star\) \[\frac{3542}{6} \text{ cm}^3\]
2. \(\checkmark\) \[\frac{4081}{6} \text{ cm}^2\]
3. \(\star\) \[\frac{4620}{6} \text{ cm}^2\]
4. \(\star\) \[\frac{5159}{6} \text{ cm}^3\]

Question Number: 121 Question Id: 469750721 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

50 circular discs, each of diameter 14 cm and thickness 2 cm, are placed one above the other to form a cylindrical solid. The total surface area of the cylinder so formed is: (use \( \pi = \frac{22}{7} \))

\[
\frac{396}{6} \text{ cm}^2
\]

Options:
1. \(\star\) \[\frac{396}{6} \text{ cm}^2\]
2. \(\star\) \[\frac{4444}{6} \text{ cm}^2\]
3. \(\checkmark\) \[\frac{4708}{6} \text{ cm}^2\]
4. \(\star\) \[\frac{19800}{6} \text{ cm}^2\]

Question Number: 122 Question Id: 469750722 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Is Question Mandatory: No Single Line Question Option: No Negative Marks Display Text: 1/3 Option Orientation: Vertical Correct Marks: 1 Wrong Marks: 0.33

Three solid spheres of diameters 18 cm, 24 cm and 30 cm respectively are melted to form one solid sphere. The diameter of the sphere so formed is:

\[
\frac{18 + 24 + 30}{3} \text{ cm}
\]

Options:
1. \(\checkmark\) \[\frac{360}{30} \text{ cm}\]
2. \(\checkmark\) \[\frac{48}{30} \text{ cm}\]
3. \(\checkmark\) \[\frac{60}{30} \text{ cm}\]
4. \(\checkmark\) \[\frac{180}{30} \text{ cm}\]
Options:
1. ✗ 9 cm
2. ✗ 13.5 cm
3. ✗ 18 cm
4. ✓ 36 cm

Question Number : 123 Question Id : 469750723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The volume of a right prism with equilateral triangle as its base is $128\sqrt{3}$ cm$^3$. If the height of the prism is 8 cm, then the total surface area of the prism will be:

\[
\text{The volume of a right prism with equilateral triangle as its base is } 128\sqrt{3} \text{ cm}^3. \text{ If the height of the prism is 8 cm, then the total surface area of the prism will be:}
\]

Options:
1. ✗ \((192 + 16\sqrt{3})\) cm$^2$
2. ✓ \((192 + 32\sqrt{3})\) cm$^2$
3. ✗ \(160\sqrt{3}\) cm$^2$
4. ✗ \((96 + 8\sqrt{3})\) cm$^2$

Question Number : 124 Question Id : 469750724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The internal and external diameters of a hollow hemispherical vessel are 16 cm and 18 cm respectively. The total surface area of the vessel is: (use $\pi = \frac{22}{7}$)

\[
\text{The internal and external diameters of a hollow hemispherical vessel are 16 cm and 18 cm respectively. The total surface area of the vessel is: (use } \pi = \frac{22}{7}\text{)}
\]

Options:
1. ✗ \(\frac{27016}{7}\) cm$^2$
2. ✗ \(\frac{6380}{7}\) cm$^2$
3. ✗ \(\frac{3564}{7}\) cm$^2$
4. ✓ \(\frac{6754}{7}\) cm$^2$
A hollow cylindrical road roller made of iron has thickness 11 cm and width 1 m. Its inner diameter is 52 cm. If 1 cm$^3$ of iron weighs 10 gm, then the weight of the road roller is: (use $\pi = \frac{22}{7}$)

Options :
1. $\times$ 21,780 gm
2. $\times$ 2,178 kg
3. $\times$ 217.8 kg
4. $\times$ 2,178 gm

In the figure, O is the centre of the circle. If $\angle OBC = 52^\circ$, then $\angle BAC$ is equal to:

Options :
1. $\times$ 52$^\circ$
2. $\times$ 76$^\circ$
3. $\times$ 152$^\circ$
4. $\checkmark$ 38$^\circ$

In the figure, PQR is a tangent to the circle at Q. If AB $\parallel$ PR, $\angle BQR = 50^\circ$ then $\angle AQB$ is equal to:

Options :
Question Number : 128 Question Id : 469750728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

In the figure, O is the centre of the circle. If $\angle AOB = 60^\circ$, then $\angle ACB$ is:

\[ \angle AOB = 60^\circ, \therefore \angle ACB : \]

Options :
1. $120^\circ$
2. $90^\circ$
3. $60^\circ$
4. $30^\circ$

Question Number : 129 Question Id : 469750729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

In the given figure, what is the value of $x$ ?

\[ \angle POS = 45^\circ, \therefore \angle ROS : \]

Options :
1. $10$
2. $20$
3. $40$
4. $180$

Question Number : 130 Question Id : 469750730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
In the figure, if O is the centre of the circle and AC = BC, then what can we say about \( \angle OCB \)?

Options:
1. \( \angle OCB \) is an acute angle
2. \( \angle OCB \) is a right angle
3. \( \angle OCB \) is an obtuse angle
4. Data given is insufficient to answer

Question Number : 131 Question Id : 469750731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

AOB is a diameter of the circle. If \( \text{arc } APC = \frac{1}{3} \text{arc } BQC \), then \( \angle BOC \) is equal to:

Options:
1. \( 45^\circ \)
2. \( 120^\circ \)
3. \( 135^\circ \)
4. \( 150^\circ \)
In the figure, OAPBO is a sector of a circle of radius 15.4 cm. If \( \angle AOB = 45^\circ \), then the perimeter of the sector will be (use \( \pi = \frac{22}{7} \)):

\[ \text{Options:} \]

1. \( \times \) 12.1 cm
2. \( \checkmark \) 42.9 cm
3. \( \times \) 55 cm
4. \( \times \) 79.2 cm

In the figure, O is the centre of the circle. PA and PB are tangents to the circle at A and B respectively. If the radius of the circle is 5 cm and PA \( \perp \) PB, then the length of the line segment PB is:

\[ \text{Options:} \]

1. \( \times \) 10 cm
2. \( \times \) 8 cm
3. \( \times \) \( 5\sqrt{2} \) cm
4. \( \checkmark \) 5 cm
In the figure, C is the centre of the circle. PA and PB are tangents to the circle at A and B respectively. If $\angle APB = 70^\circ$, then $\angle ACP$ is:

Options:
1. $20^\circ$
2. $55^\circ$
3. $65^\circ$
4. $70^\circ$

POQ is the diameter of the circle. If R, S and T are any three points on the circle, then $\angle PRS + \angle STQ = ?$

Options:
1. $540^\circ$
2. $360^\circ$
3. $180^\circ$
4. $270^\circ$

In the given figure, the value of $x$ is:

Options:
1. ✔️ 3 cm
2. ✗ 6 cm
3. ✗ 20 cm
4. ✗ 18 cm

Question Number : 137 Question Id : 469750737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
In the given figure, O is the centre of the circle. If ∠ABC = 110°, then ∠OAC is equal to:

Options :
1. ✔️ 20°
2. ✗ 35°
3. ✗ 55°
4. ✗ 70°

Question Number : 138 Question Id : 469750738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
A circle is inscribed in an quadrilateral ABCD in which ∠D = 90°. If AB =16 cm, AD = 21 cm and BR = 4 cm, then the radius of the circle is:

∠D = 90° తా అంటే చతురస్రం ABCD ద్వారా కలిపబడే వంతు వెలుగుతుంది. AB = 16 cm, AD = 21 cm అంటే BR = 4 cm వంటాం. కలిపబడే వంతు వెలుగుతుంది:

Options :
1. ✗ 4 cm
2. ✗ 5 cm
3. ✔️ 9 cm
4. ✗ 16 cm
Question Number : 139 Question Id : 469750739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

In the figure, AB is the diameter and AC is the chord of the circle. The tangent at C intersects AB produced in a point D. If $\angle ACD = 125^\circ$, then $\angle CBA =$ ?

Options :
1. $\times$ 35°
2. $\times$ 45°
3. $\checkmark$ 55°
4. $\times$ 12.5°

Question Number : 140 Question Id : 469750740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

Three consecutive vertices of a rectangle are (1, 3), (4, 3) and (4, –2). The coordinates of the fourth vertex are:

Options :
1. $\times$ (1, 8)
2. $\times$ (1, 3)
3. $\times$ (–2, 1)
4. $\checkmark$ (1, –2)

Question Number : 141 Question Id : 469750741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The equation of a line that is equidistant from the lines $x = -7$ and $x = 3$ is:

$x = -7$ మరియు $x = 3$ సంవత్సరాల సమాంతరంగా ఉండడానికి లంబాయి ప్రత్యేకమైన రేఖ సంస్థానం:

Options :
1. $\times$ $y + 2 = 0$
2. $\times$ $x = 0$
3. $\times$ $x = 2$
4. $\checkmark$ $x + 2 = 0$
The perimeter of a triangle formed by the points (8, 0), (0, 15) and (0, 0) is:

Options:
1. 20 units
2. 40 units
3. 60 units
4. 578 units

The coordinates of the point on y-axis that is equidistant from the points (5, 3) and (−1, −3) are:

Options:
1. (0, 4)
2. (0, 2)
3. (2, 0)
4. (4, 0)

A circle has centre at (−1, 4). If one end of a diameter is at (4, 3), then the coordinates of the other end of the diameter are:

Options:
1. (−6, 5)
2. (−2, 5)
3. \((-5, 1)\)

4. \(\begin{pmatrix} 3 \\ 7 \\ 2 \end{pmatrix}
\begin{pmatrix} 2 \\ 2 \end{pmatrix}\)

Question Number : 145 Question Id : 469750745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
If the line joining the points \((1, -5)\) and \((-3, 5)\) is perpendicular to the line joining the points \((6, k)\) and \((1, 2)\), then the value of \(k\) is:

\((1, -5)\) లేదా రేఖ లో \((-3, 5)\) లేదా రేఖ లో \((6, k)\) లేదా రేఖ లో \((1, 2)\) లేదా రేఖ లో విభాగం చేయడం క్రమంగా, \(k\) విభాగం చేయడం:

Options:
1. ✗ 0
2. ✔ 4
3. ✗ 1
4. ✗ \(\frac{21}{2}\)

Question Number : 146 Question Id : 469750746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
If \(2\sin^2\theta - \cos^2\theta = 2\), \((0^\circ \leq \theta \leq 90^\circ)\) then the value of \(1 + \sin\theta\) is:

\(2\sin^2\theta - \cos^2\theta = 2\), \((0^\circ \leq \theta \leq 90^\circ)\), \(1 + \sin\theta\) వాటిని ఎలా కోసాయి?

Options:
1. ✗ 0
2. ✗ 1
3. ✗ \(\frac{3}{2}\)
4. ✔ 2

Question Number : 147 Question Id : 469750747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33
From the given options, the point on the \(y\)-axis having perpendicular distance of 4 units from the line \(\frac{3x}{4} - y = 1\) is:

\(\frac{3x}{4} - y = 1\) లో యాంత్రిక దూరం 4 మిట్టు లో యిందను మాట్లాడం వేయడం యోక్క విభాగం?

Options:
1. ✔ \((0, -6)\)
2. ✗ \((8, 0)\)
3. (0, -5)
4. (4, 0)

Question Number : 148 Question Id : 469750748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

If \( \csc \theta + \cot \theta = p \), then the value of \( \frac{p^2+1}{p^2-1} \) is:

\( \csc \theta + \cot \theta = p \implies \frac{p^2+1}{p^2-1} \) \( \text{What?} \)

Options :
1. \( \cos \theta \)
2. \( \text{✓ sec} \theta \)
3. \( \cot \theta \)
4. \( \text{✓ sin} \theta \)

Question Number : 149 Question Id : 469750749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

The value of \( \tan \theta \cot(90^\circ - \theta) - \csc(90^\circ - \theta)\sec \theta + \sqrt{3} \sin 18^\circ \sin 60^\circ \sec 72^\circ \) is:

\( \tan \theta \cot(90^\circ - \theta) - \csc(90^\circ - \theta)\sec \theta + \sqrt{3} \sin 18^\circ \sin 60^\circ \sec 72^\circ \) \( \text{What?} \)

Options :
1. \( \frac{1}{2} \)
2. \( \frac{1}{2} \)
3. \( \frac{\sqrt{3} - 2}{2} \)
4. \( \frac{\sqrt{3} - \sqrt{2}}{\sqrt{2}} \)

Question Number : 150 Question Id : 469750750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Negative Marks Display Text : 1/3 Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0.33

If the area of a triangle with vertices at \((-2, p), (4, 4)\) and \((2, -2)\) is \(17 \text{ unit}^2\), then the two values of \(p\) are:

\((-2, p), (4, 4)\) \(\text{and} \) \((2, -2)\) \(\text{such that} \) \(\text{the area of triangle is} \) \(17 \text{ unit}^2\) \(\text{and} \) \(p \\text{are} \) \(\text{What?} \)

Options :
1. 3, -31
2. -3, -31
3. \[ \frac{11}{2} , \frac{45}{2} \]
4. \[ \frac{11}{2} , \frac{45}{2} \]