

MATHS

CDS PREVIOUS YEAR PAPER

PREVIOUS YEAR PAPER 2010(II)

Multiple Choice Question

1. Two sides of an acute-angled triangle are 6 cm and 2 cm respectively. Which one of the following represents the correct range of the third side in cm?

A. A) $(4, 8)$

B. B) $(4, 2\sqrt{10})$

C. C) $(4\sqrt{2}, 8)$

D. D) $(4\sqrt{8}, 2\sqrt{10})$

Answer:



Watch Video Solution

2. What is the last digit in the expansion of 3^{4798} ?

A. A)1

B. B)3

C. C)7

D. D)9

Answer:



Watch Video Solution

3. What is the value of

$$\left(\frac{1}{\sqrt{9} - \sqrt{8}} - \frac{1}{\sqrt{8} - \sqrt{7}} + \frac{1}{\sqrt{7} - \sqrt{6}} - \frac{1}{\sqrt{6} - \sqrt{5}} + \frac{1}{\sqrt{5} - \sqrt{4}} \right)$$

?

A. 0

B. 1

C. 5

D. $1/3$

Answer:



Watch Video Solution

4. What are the factors of $x^2 + 4y^2 + 4y - 4xy - 2x - 8$?

A. $(x - 2y - 4)$ and $(x - 2y + 2)$

B. $(x - y + 2)$ and $(x - 4y + 4)$

C. $(x - y + 2)$ and $(x - 4y - 4)$

D. $(x + 2y - 4)$ and $(x + 2y + 2)$

Answer:



Watch Video Solution

5. What is the HCF of

$4x^3 + 3x^2y - 9xy^2 + 2y^3$ and $x^2 + xy - 2y^2$?

A. $x - 2y$

B. $x - y$

C. $(x + 2y)(x - y)$

D. $(x - 2y)(x - y)$

Answer:

[Watch Video Solution](#)

6. What is the sum of the digits of the least number which, when divided by 52, leaves 33 as remainder, when divided by 78, leaves 59 and when divided by 117, leaves 98 as remainder?

A. 17

B. 18

C. 19

D. 21

Answer:

[Watch Video Solution](#)

7. If $f(x)$ and $g(x)$ are two polynomials with integers coefficient which vanish at $x = 1/2$, then what is the factor of HCF of $f(x)$ and $g(x)$?

A. $x - 1$

B. $x - 2$

C. $2x - 1$

D. $2x + 1$

Answer:



Watch Video Solution

8. If the expression $(px^3 + x^2 - 2x - q)$ is divisible by $(x - 1)$ and $(x + 1)$, what are the values of p and q respectively?

A. 2, -1

B. $-2, 1$

C. $-2, -1$

D. $2, 1$

Answer:



Watch Video Solution

9. The ratio between the ages of A and B is $2:5$. After 8 years, their ages will be in the ratio $1:2$. What is the difference between their present ages?

A. 20 years

B. 22 years

C. 24 years

D. 25 years

Answer:



Watch Video Solution

10. A mixture contains milk and water in the ratio of 5:6. On adding 8 litres of water, the ratio of milk and water becomes 1:2. Find the quantity of the milk in the mixture. (in litres)

- A. 5 litres
- B. 25 litres
- C. 27.5 litres
- D. 32.5 litres

Answer:



Watch Video Solution

11. What is the smallest positive integer which when divided by 4, 5, 8, 9 leaves remainders 3, 4, 7, 8 respectively?

A. 119

B. 319

C. 359

D. 719

Answer:



Watch Video Solution

12. What is the value of x for which x , $x + 1$, $x + 3$ are all prime numbers?

A. 0

B. 1

C. 2

D. 101

Answer:



Watch Video Solution

13. A person spends 30% of monthly salary on rent, 25% on food, 20% on children's education and 12% on electricity, and the balance of Rs 1,040 on the remaining items. What is the monthly salary of the person?

A. Rs 8,000

B. Rs 9,000

C. Rs 9,600

D. Rs 10,600

Answer:



Watch Video Solution

14. If $p^x = r^y = m$ and $r^w = p^z = n$, then which one of the following is correct?

A. $xw = yz$

B. $xz = yw$

C. $x + y = w + z$

D. $x - y = w - z$

Answer:



Watch Video Solution

15. A father and his son start at a point A with speeds of 12 kmph and 18 kmph respectively, and reach another point B. If his son starts 60 minutes after his father at A and reaches B 60 minutes before his father, what is the distance between A and B?

- A. 90 km
- B. 72 km
- C. 36 km
- D. None of the above

Answer:



Watch Video Solution

16. If the equation $(a^2 + b^2)x^2 - 2(ac + bd)x + (c^2 + d^2) = 0$ has equal roots, then which one of the following is correct?

A. $ab = cd$

B. $ad = bc$

C. $a^2 + c^2 = b^2 + d^2$

D. $ac = bd$

Answer:



Watch Video Solution

17. Two trains of lengths 100 m and 150 m are travelling in opposite directions at speeds of 75 kmph and 50 kmph respectively. What is the time taken by them to cross each other?

A. 7.4 s

B. 7.2 s

C. 7 s

D. 6.8 s

Answer:



Watch Video Solution

18. If $(a - b) : (a + b) = 1 : 5$, then what is $(a^2 - b^2) : (a^2 + b^2)$ equal to?

A. 2 : 3

B. 3 : 2

C. 5 : 13

D. 13 : 5

Answer:



Watch Video Solution

19. If x varies as m^{th} power of y , y varies as n^{th} power of z and x varies as p^{th} power of z then which one of the following is true?

A. $p = m + n$

B. $p = m - n$

C. $p = mn$

D. None of the above

Answer:



Watch Video Solution

20.

If

$$x = (b - c)(a - d), y = (c - a)(b - d), z = (a - b)(c - d),$$

then the what is $x^3 + y^3 + z^3$ equal to?

A. xyz

B. $2xyz$

C. $3xyz$

D. $-3xyz$

Answer:



Watch Video Solution

21. If the 14th term of an arithmetic series is 6 and 6th term is 14, then what is the 95th term?

A. -75

B. 75

C. 80

D. -80

Answer:

[Watch Video Solution](#)

22. What is the solution of the equation

$$\sqrt{\frac{x}{x+3}} - \sqrt{\frac{x+3}{x}} = -\frac{3}{2}?$$

A. 1

B. 2

C. 4

D. None of the above

Answer:

[Watch Video Solution](#)

23. If n is a positive integer, then what is the digit in the unit place of $3^{2n+1} + 2^{2n+1}$?

A. 0

B. 3

C. 5

D. 7

Answer:



Watch Video Solution

24. If k is any positive integer, then $(k^2 + 2k)$ is

A. divisible by 24

B. divisible by 8 but may not be divisible by 24

C. divisible by 4 but may not be divisible by 8

D. divisible by 2 but may not be divisible by 4

Answer:



Watch Video Solution

25. If salary of X is 20% more than salary of Y, then by how much percentage is salary of Y less than X?

A. 25

B. 20

C. $50/3$

D. $50/6$

Answer:



Watch Video Solution

26. What are the roots of the equation $4^x - 3 \cdot 2^{x+2} + 32 = 0$?

A. 1, 2

B. 3, 4

C. 2, 3

D. 1, 3

Answer:



Watch Video Solution

27. If α and β are the roots of the equation $x^2 - x - 1 = 0$, then what is the value of $(\alpha^4 + \beta^4)$?

A. 7

B. 0

C. 2

D. None of the above

Answer:



Watch Video Solution

28. Under what condition do the equation

$kx - y = 2$ and $6x - 2y = 3$ have a unique solution?

A. $k = 3$

B. $k \neq 3$

C. $k = 0$

D. None of the above

Answer:



Watch Video Solution

29. If sum as well as product of roots of a quadratic equation is 9, then what is the equation?

A. $x^2 + 9x - 18 = 0$

B. $x^2 - 18x + 9 = 0$

C. $x^2 + 9x + 9 = 0$

D. $x^2 - 9x + 9 = 0$

Answer:



Watch Video Solution

30. Which one of the following is a non-terminating and repeating decimal?

A. $13/8$

B. $3/16$

C. $3/11$

D. $137/25$

Answer:



Watch Video Solution

31. If $a + b + c = 0$, then the value of $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab}$ is :

A. -3

B. 0

C. 1

D. 3

Answer:



Watch Video Solution

32. If 1 is added to the denominator of a fraction, it becomes $1/2$ and if 1 is added to the numerator, the fraction becomes 1. What is the fraction?

A. $5/9$

B. $2/3$

C. $4/7$

D. $10/11$

Answer:



Watch Video Solution

33. A motorboat takes 2 hours to travel a distance of 9 km down the current and it takes 6 hours to travel the same distance against the current. What is the speed of the boat in still water in kmph?

A. 3

B. 2

C. 1.5

D. 1

Answer:



Watch Video Solution

34. A can do a piece of work in 24 days. If B is 60% more efficient than A, then how many days does B require to do the same work?

A. A)12

B. B)15

C. C)16

D. D)18

Answer:



Watch Video Solution

35. A sum of money lent on simple interest triples itself in 15 years and 6 months. In how many years will it be doubled?

A. 6 years and 3 months

B. 7 years and 9 months

C. 8 years and 3 months

D. 9 years and 6 months

Answer:



Watch Video Solution

36. Oniselling an article for ₹ 240, a trader loses 4 % . In order to gain 10 % he must sell that article for:

A. Rs 275

B. Rs 280

C. Rs 285

D. Rs 300

Answer:



Watch Video Solution

37. In a class, the no. of boys is more than the no. of girls by 12% of the total strength. The ratio of boys to girls is :

A. 11: 14

B. 14: 11

C. 28: 25

D. 25: 28

Answer:



Watch Video Solution

38. Three numbers are in the ratio 3:2:5 and the sum of their squares is 1862. What are the three numbers?

A. 18, 12, 30

B. 24, 16, 25

C. 15, 10, 25

D. 21, 14, 35

Answer:



Watch Video Solution

39. If one root of the equation $ax^2 + x - 3 = 0$ is -1, then what is the other root?

A. $1/4$

B. $1/2$

C. $3/4$

D. 1

Answer:



[Watch Video Solution](#)

40. What is the value of

$$\frac{1}{2}\log_{10}25 - 2\log_{10}3 + \log_{10}18?$$

A. 2

B. 3

C. 1

D. 0

Answer:



[Watch Video Solution](#)

41. The product of a rational number and an irrational number is

- A. a natural number
- B. an irrational number
- C. a composite number
- D. a rational number

Answer:



Watch Video Solution

42. The angle of elevation of the top of a tower from the bottom of a building is twice that from its top. What is the height of the building if the height of the tower is 75 m and the angle of elevation of the top of the tower from the bottom of the building is 60° ?

- A. 25 m
- B. 37.5 m

C. 50 m

D. 60 m

Answer:



Watch Video Solution

43. If $\cos \theta \geq 1/2$ in the first quadrant, which one of the following is correct ?

A. $\theta \leq \pi/3$

B. $\theta \geq \pi/3$

C. $\theta \leq \pi/6$

D. $\theta \geq \pi/6$

Answer:



Watch Video Solution

44. What is the value of

$$\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 90^\circ ?$$

A. $1/2$

B. 0

C. 1

D. 2

Answer:



Watch Video Solution

45. Two poles of heights 6m and 11 m stand on plane ground. If the distance between their feet is 12 m, find the distance between their tops.

A. 11 m

B. 12 m

C. 13 m

D. 14 m

Answer:



Watch Video Solution

46. If $\sin\theta + \cos\theta = 1$, then what is the value of $\sin\theta\cos\theta$?

A. A)2

B. B)0

C. C)1

D. D) $1/2$

Answer:



Watch Video Solution

47. What is $\sqrt{\frac{1 + \sin\theta}{1 - \sin\theta}}$ equal to?

A. $\sec\theta - \tan\theta$

B. $\sec\theta + \tan\theta$

C. $\operatorname{cosec}\theta + \cot\theta$

D. $\operatorname{cosec}\theta - \cot\theta$

Answer:



Watch Video Solution

48. The shadow of a tower is 15 m when the Sun's altitude is 30° .
What is the length of the shadow when the Sun's altitude is 60° ?

- A. 3 m
- B. 4 m
- C. 5 m
- D. 6 m

Answer:



Watch Video Solution

49. The arithmetic mean of 100 numbers was computed as 89.05. It was later found that two numbers 92 and 83 have been misread as 192 and 33 respectively. What is the correct arithmetic mean of the numbers?

- A. 88.55
- B. 87.55
- C. 89.55
- D. Cannot be calculated from the given data

Answer:



Watch Video Solution

50. In a triangle, if sum of two angles is equal to the third angle (considering the interior angles only), then the triangle is

- A. right-angled
- B. acute-angled
- C. equilateral
- D. obtuse-angled

Answer:



Watch Video Solution

51. The side BC of the triangle ABC is extended to D. If $\angle ACD = 120^\circ$, $\angle ABC = \frac{2}{3}\angle CAB$, then what is $\angle BAC$?

A. 60°

B. 45°

C. 30°

D. 72°

Answer:



Watch Video Solution

52. Let PAB be a secant to a circle intersecting at points A and B, and PC is a tangent. Which one of the following is correct?

- A. The area of rectangle with PA, PB as sides is equal to the area of square with PC as side
- B. The area of rectangle with PA, PC as sides is equal to the area of square with PB as side
- C. The area of rectangle with PC, PA as sides is equal to the area of square with PA as side
- D. The perimeter of rectangle with PA, PB as sides is equal to the area of perimeter with PC as side

Answer:



Watch Video Solution

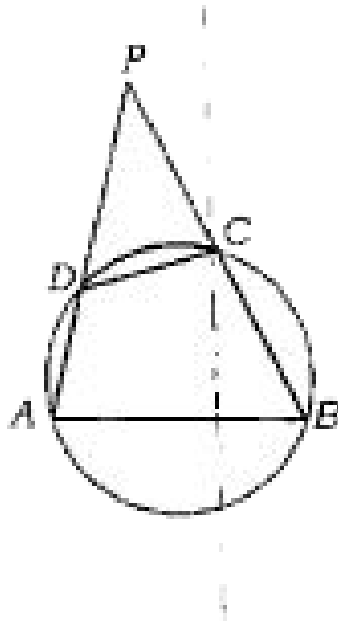
53. The line segments AB and CD intersect at O . OF is the internal bisector of obtuse angle BOC and OE is the internal bisector of acute angle AOC . If $\angle BOC = 130^\circ$, what is the measure of $\angle FOE$?

- A. 90°
- B. 110°
- C. 115°
- D. 120°

Answer:



Watch Video Solution



54.

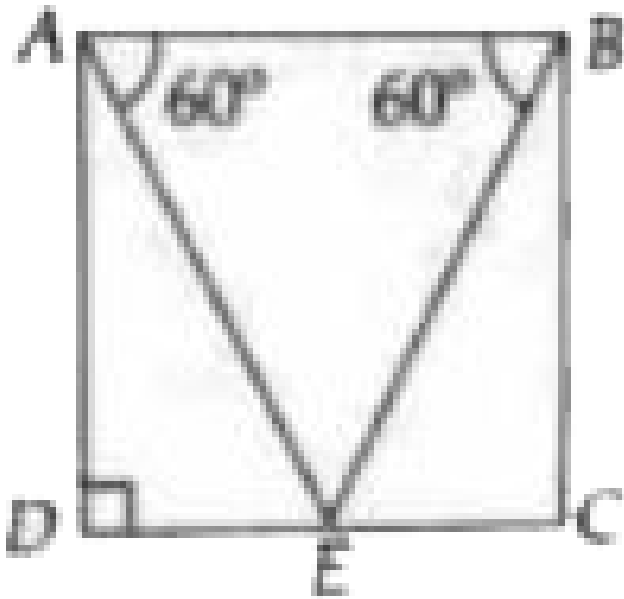
In the figure given above, if $\angle BAD = 60^\circ$, $\angle ADC = 105^\circ$, then what is $\angle DPC$ equal to?

- A. 40°
- B. 45°
- C. 50°
- D. 60°

Answer:

[Watch Video Solution](#)

55. In the adjacent figure ABCD is a quadrilateral. AB, DC are parallel and AD, BC are parallel. ADC is a right angle. If perimeter of $\triangle ABE$ is 6 unit, then what is the area of the quadrilateral ?



A. $2\sqrt{3}$ square units

B. 4 square units

C. 3 square units

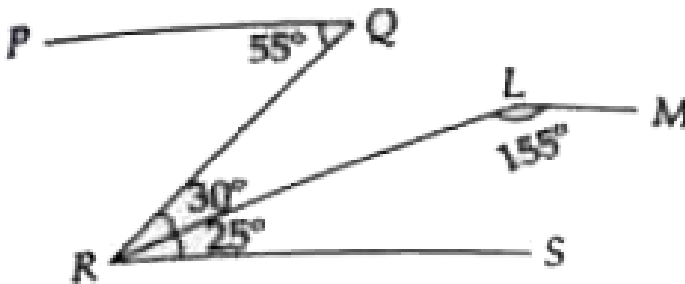
D. $4\sqrt{3}$ square units

Answer:



Watch Video Solution

56. In the figure given below RS is parallel to PQ. what is angle between lines PQ and LM?



A. 175°

B. 177°

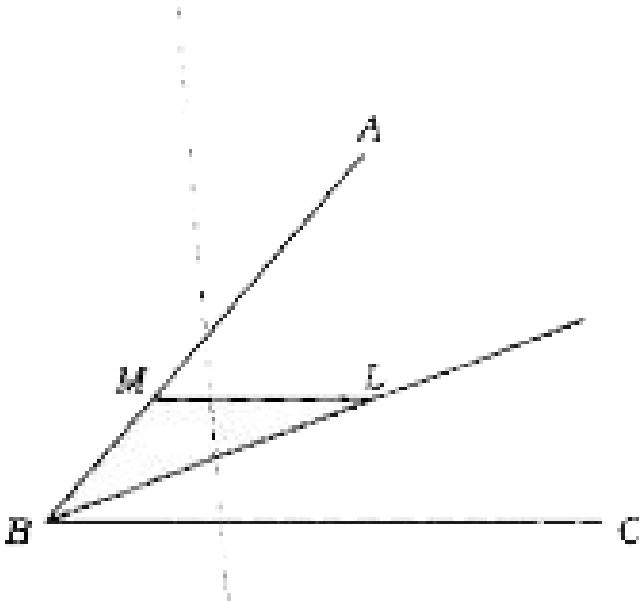
C. 179°

D. 180°

Answer:



Watch Video Solution

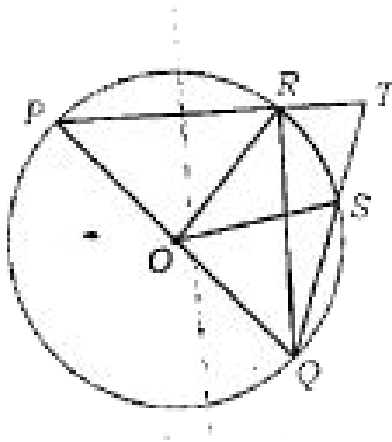


57. In the figure given above, L is any point on the bisector of the acute angle ABC and the line ML is parallel to BC. Which one of the following is correct?

- A. The triangle BML is equilateral
- B. The triangle BML is isosceles but right-angled
- C. The triangle BML is isosceles but not right-angled
- D. The triangle BML is not isosceles

Answer:

 **Watch Video Solution**



58.

In the figure given above, PQ is a diameter of the circle whose centre is at O . If $\angle ROS = 44^\circ$, then what is the value of $\angle RTS$?

A. 46°

B. 64°

C. 69°

D. None of the above

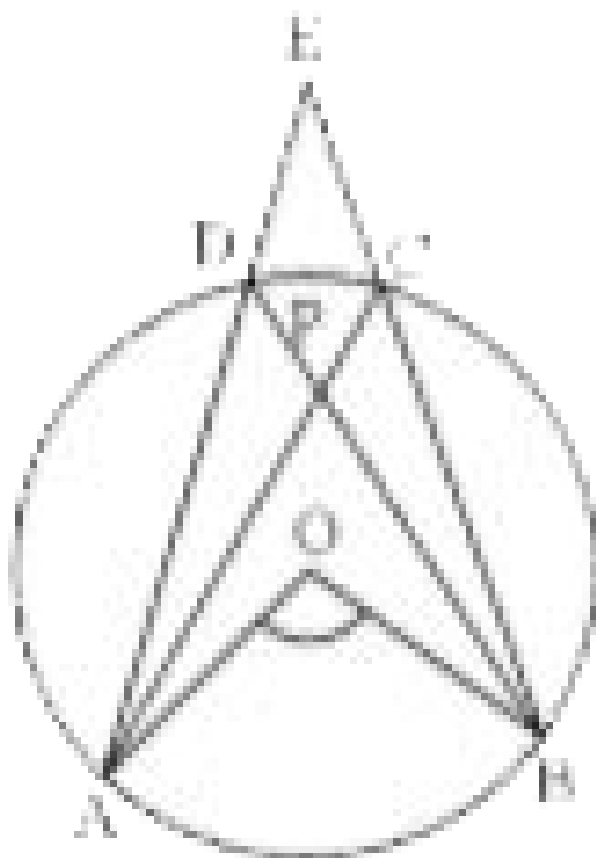
Answer:



Watch Video Solution

59. In the given figure O is the centre of the circle AC and BD intersects at P. If $\angle AOB = 100^\circ$ and $\angle DAP = 30^\circ$ then what is

the value of $\angle APB$?



- A. 77°
- B. 80°
- C. 85°

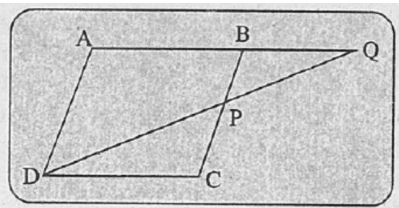
D. 90°

Answer:



Watch Video Solution

60.



In the figure given above, ABCD is a parallelogram. P is a point on BC such that $PB : PC = 1 : 2$. DP produced meets AB produced at Q. If the area of the triangle BPQ is 20 square units, what is the area of the triangle DCP?

A. 20 square units

B. 30 square units

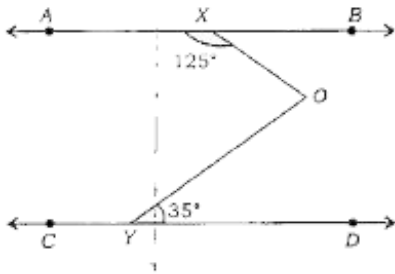
C. 40 square units

D. None of the above

Answer:



Watch Video Solution



61.

In the figure given, AB is parallel to CD. What is $\angle XOY$?

A. 80°

B. 90°

C. 95°

D. 100°

Answer:



Watch Video Solution

62. What is the radius of the circle inscribed in a triangle having side lengths 35 cm, 44 cm and 75 cm?

A. 3 cm

B. 4 cm

C. 5 cm

D. 6 cm

Answer:



Watch Video Solution

63. What is the maximum length of a rod that can be placed inside a box having the shape of a cuboid of length 30 cm, breadth 24 cm and height 18 cm?

- A. 30 cm
- B. $30\sqrt{2}$ cm
- C. 24 cm
- D. $18\sqrt{5}$ cm

Answer:



Watch Video Solution

64. The volume of a sphere is 8 times that of another sphere. What is the ratio of their surface areas?

- A. 8:1

B. 4:1

C. 2:1

D. 4:3

Answer:



Watch Video Solution

65. A rectangular area of 6 square metres is to be painted on a 3 m \times 4 m board leaving a border of uniform width on all sides. What should be the width of the border?

A. 0.25 m

B. 0.5 m

C. 1 m

D. 3 m

Answer:



Watch Video Solution

66. A solid cylinder of height 9 m has its curved surface area equal to one-third of the total surface area. What is the radius of the base?

A. A) 9 m

B. B) 18 m

C. C) 27 m

D. D) 30 m

Answer:



Watch Video Solution

67. A figure is formed by revolving a rectangular sheet of dimensions $7\text{ cm} \times 4\text{ cm}$ about its length. What is the volume of the figure thus formed?

A. 352 cm^3

B. 296 cm^3

C. 176 cm^3

D. 616 cm^3

Answer:



Watch Video Solution

68. The diagonals of the three faces of a cuboid are x, y, z respectively. What is the volume of the cuboid?

A. $\frac{xyz}{2\sqrt{2}}$

B. $\frac{\sqrt{(y^2 + z^2)(z^2 + z^2)(x^2 + y^2)}}{2\sqrt{2}}$

C. $\frac{\sqrt{(y^2 + z^2 - x^2)(z^2 + z^2 - y^2)(x^2 + y^2 - z^2)}}{2\sqrt{2}}$

D. None of the above

Answer:



Watch Video Solution

69. Half of a large cylindrical tank open at the top is filled with water and identical heavy spherical balls are to be dropped into the tank without spilling water out. If the radius and the height of the tank are equal and each is four times the radius of a ball, what is the maximum number of balls that can be dropped?

A. 12

B. 24

C. 36

D. 48

Answer:



Watch Video Solution

70. The diameters of two circles are 18 cm and 8 cm. The distance between their centres is 13 cm. What is the number of common tangents?

A. 1

B. 2

C. 3

D. None of the above

Answer:



[Watch Video Solution](#)

71. If the height of a cone is increased by 50%, then what is the percentage increase in the volume of the cone?

A. $100/3$

B. 40

C. 50

D. $200/3$

Answer:



[Watch Video Solution](#)

72. If three cubic biscuits edges 0.3 m, 0.4 m and 0.5 m respectively are melted and formed into a single cubic biscuit, then what is the

total surface area of the cubic biscuit?

A. A) 1.08 m^2

B. B) 1.56 m^2

C. C) 1.84 m^2

D. D) 2.16 m^2

Answer:



Watch Video Solution

73. A wheel of a bicycle has inner diameter 50 cm and thickness 10 cm. What is the speed of the bicycle if it makes 10 revolutions in 5 seconds?

A. 5.5 m/s

B. 4.4 m/s

C. 3.3 m/s

D. 2.2 m/s

Answer:



Watch Video Solution

74. A wire of length 36 cm is bent in the form of a semicircle. What is the radius of the semicircle?

A. 9 cm

B. 8 cm

C. 7 cm

D. 6 cm

Answer:



Watch Video Solution

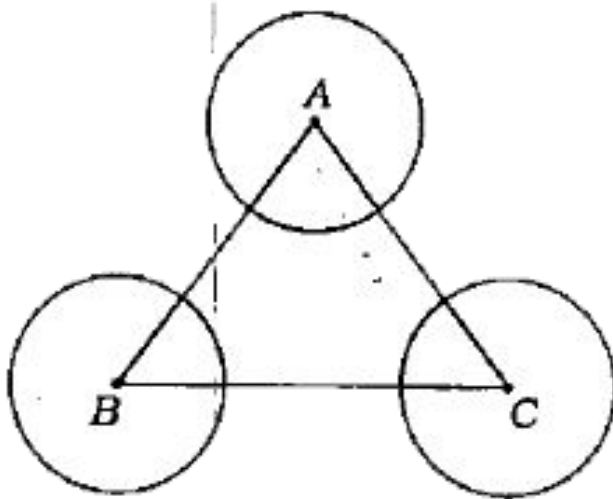
75. In order to fix an electric pole along a roadside, a pit with dimensions $50\text{ cm} \times 50\text{ cm}$ is dug with the help of a spade. The pit is prepared by removing earth by 250 strokes of spade. If one stroke of spade removes 500 cm^3 of earth, then what is the depth of the pit?

- A. 3 m
- B. 1 m
- C. 0.75 m
- D. 0.5 m

Answer:



Watch Video Solution



76.

In the figure given above, what is the sum of the angles formed around A, B, C except the angles of the triangle ABC ?

- A. 360°
- B. 720°
- C. 900°
- D. 1000°

Answer:

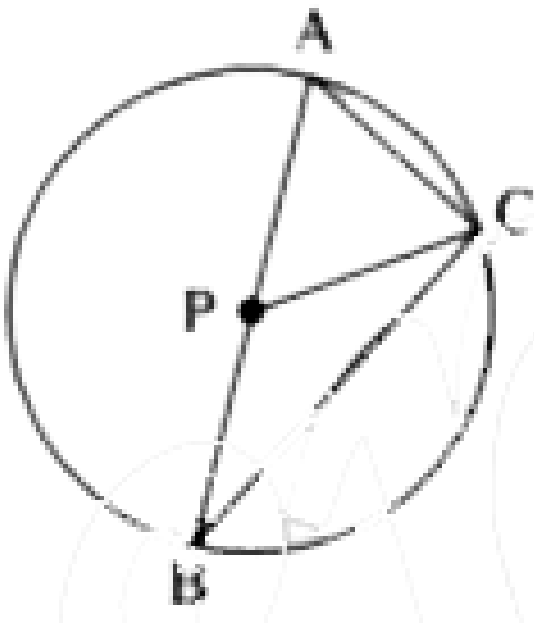


Watch Video Solution

77. The ends of the diameter of circles are A & B whose centre is P.

A point C is on the circumference of the circle such that

$\angle ABC = 35^\circ$ then find $\angle PCA$.



A. 25°

B. 30°

C. 35°

D. 55°

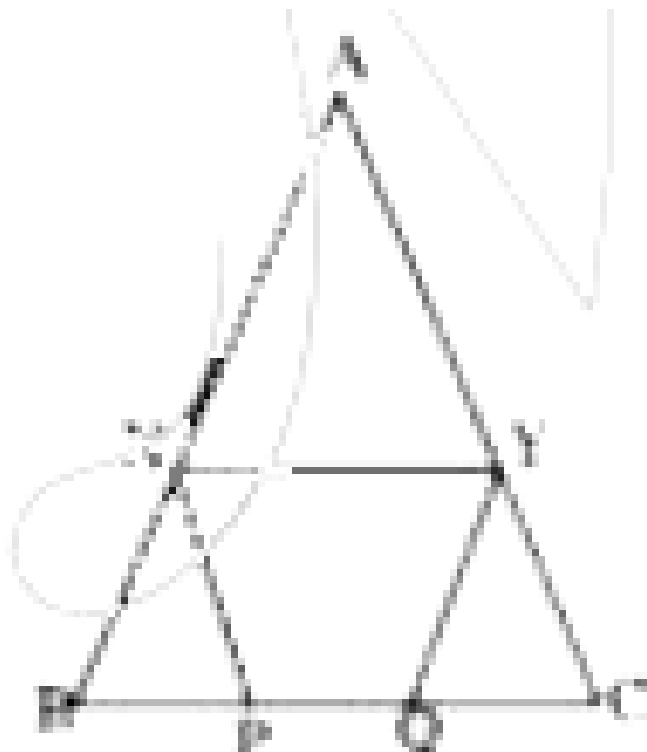
Answer:



Watch Video Solution

78. In the given figure $\triangle ABC$ is an equilateral triangle of side 30 cm. $XY \parallel BC$, $XP \parallel AC$ and $YQ \parallel AB$. If $(XY + XP + YQ) = 40$ cm then PQ is

equal to?

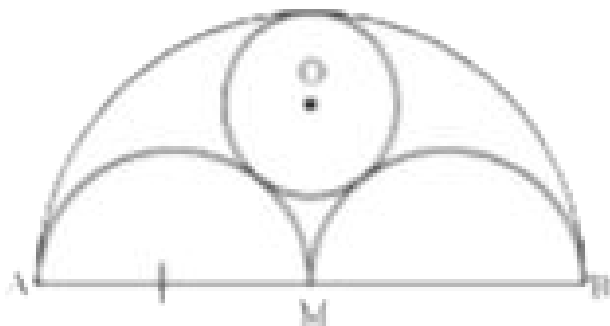


- A. 5 cm
- B. 12 cm
- C. 15 cm
- D. None of the above

Answer:



79. In the given figure, AB is a line of length $2a$ and mid Point M . Taking AM , MB and AB as diameters semi circles are drawn on the same sides of the line. Taking centre O and radius ' r ' a circle is drawn such that it touches all the three circles. Then find the value of r .



A. $2a/3$

B. $a/2$

C. $a/3$

D. $a/4$

Answer:



Watch Video Solution

80. The mean weight of 150 students in a certain class is 60 kg. The mean weight of the boys from the class is 70 kg, while that of girls is 55 kg. What is the number of girls in the class?

A. A)105

B. B)100

C. C)95

D. D)60

Answer:



Watch Video Solution

81. In an examination, 40% of the candidates wrote their answers in Hindi and the others is English. The average marks of the candidates written in Hindi is 74 and the average marks of the candidates written in English is 77. What is the average marks of all the candidates?

A. 75.5

B. 75.8

C. 76

D. 76.8

Answer:



Watch Video Solution

82. Consider the following frequency distribution :

<i>Class</i>	0-10	0-20	0-30	0-40	0-50
<i>Frequency</i>	3	8	14	20	25

What is the above frequency distribution known as?

- A. Cumulative distribution in more than type
- B. Cumulative distribution in less than type
- C. Continuous frequency distribution
- D. None of the above

Answer:



Watch Video Solution

83. Consider the following statements in respect of histogram :

1. Histogram is an equivalent graphical representation of the

frequency distribution.

2. Histogram is suitable for continuous random variables, where the total frequency of an interval is evenly distributed over the interval.

What of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer:



Watch Video Solution

84. What is the median of the values 11, 7, 6, 9, 12, 15, 19 ?

A. A)9

B. B)11

C. C)12

D. D)15

Answer:



Watch Video Solution

85. Let $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$ are n pairs of positive numbers. The arithmetic mean and geometric mean of any of positive numbers (c_1, c_2, \dots, c_n) are denoted by $M(c_i), G(c_i)$ respectively.

Consider the following :

1. $M(x_1 + y_1) = M(x_i) + M(y_i)$

2. $G(x_i y_i) = G(x_i)G(y_i)$

Which of the above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer:



Watch Video Solution

86. A circle and a square have the same perimeter. Which one of the following is correct?

- A. The area of the circle is equal to that of square
- B. The area of the circle is larger to that of square

C. The area of the circle is less to that of square

D. No conclusion can be drawn

Answer:



Watch Video Solution

87. If $(x^4 + x^{-4}) = 322$, what is one of the value of $(x - x^{-1})$?

A. 18

B. 16

C. 8

D. 4

Answer:



Watch Video Solution

88. Consider the following statements :

1. If two triangles are equiangular, then they are similar.
2. If two triangles have equal area, then they are similar.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer:

 **Watch Video Solution**

89. If two corresponding sides of two similar triangles are in the ratio 9: 4, then what is the ratio of their areas?

A. A)9 : 4

B. B)3 : 2

C. C)81 : 16

D. D)27 : 8

Answer:



Watch Video Solution

90. ABCD is a quadrilateral, the sides of which touch a circle. Which one of the following is correct?

A. $AB + AD = CB + CD$

B. $AB : CD = AD : BC$

C. $AB + CD = AD + BC$

D. $AB : AD = CB : CD$

Answer:



Watch Video Solution

91. By selling 8 dozen pencils, a shopkeeper gains the selling price of 1 dozen pencils. What is the gain?

A. $12\frac{1}{2}\%$

B. $13\frac{1}{7}\%$

C. $14\frac{2}{7}\%$

D. $87\frac{1}{2}\%$

Answer:



Watch Video Solution

92. The ratio of A to B is $x : 8$ and the ratio of B to C is $12 : z$. If the ratio of A to C is $2 : 1$, then what is the ratio of $x : z$?

A. $2 : 3$

B. $3 : 2$

C. $4 : 3$

D. $3 : 4$

Answer:



Watch Video Solution

93. If α and β are the roots of the equation $x^2 + px + q = 0$, then $-\alpha^{-1}$, $-\beta^{-1}$ are the root of which one of the following equations?

A. $qx^2 - px + 1 = 0$

B. $qx^2 + px + 1 = 0$

C. $x^2 + px - q = 0$

D. $x^2 - px + q = 0$

Answer:



Watch Video Solution

94. For a set of positive numbers, consider the following statements :

1. If each number is reduced by 2, then the geometric mean of the set may not always exist.
2. If each number is increased by 2, then the geometric mean of the set is increased by 2.

Which of the above statements is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer:



Watch Video Solution

95. Let C be a right-circular cone. It is given that the two ends of a frustum of C are of radii 3 cm and 6 cm, and the height of the frustum is 9 cm.

What is the slant height of the given frustum?

A. $3\sqrt{10}$ cm

B. $6\sqrt{10}$ cm

C. 12 cm

D. 15 cm

Answer:



Watch Video Solution

96. Let C be a right-circular cone. It is given that the two ends of a frustum of C are of radii 3 cm and 6 cm, and the height of the frustum is 9 cm.

What is the height of the cone?

A. 9 cm

B. 12 cm

C. 13.5 cm

D. 18 cm

Answer:

97. Let C be a right-circular cone. It is given that the two ends of a frustum of C are of radii 3 cm and 6 cm, and the height of the frustum is 9 cm.

What is the total surface area of the given frustum?

A. $9\pi(2\sqrt{10} + 5)\text{cm}^2$

B. $9\pi(3\sqrt{10} + 5)\text{cm}^2$

C. $9\pi(3\sqrt{10} + 4)\text{cm}^2$

D. $27\pi(\sqrt{10} + 1)\text{cm}^2$

Answer:

98. Let ABCD be a quadrilateral. Let the diagonals AC and BD meet at O. Let the perpendicular drawn from A to CD meet CD at E. Further, $AO : OC = BO : OD$, $AB = 30$ cm, $CD = 40$ cm and the area of the quadrilateral ABCD is 1050 cm^2 .

What is BE equal to?

A. 30 cm

B. $30\sqrt{2}$ cm

C. $30\sqrt{3}$ cm

D. None of the above

Answer:



Watch Video Solution

99. Let ABCD be a quadrilateral. Let the diagonals AC and BD meet at O. Let the perpendicular drawn from A to CD meet CD at E. Further, $AO:OC = BO:OD$, $AB = 30$ cm, $CD = 40$ cm and the area of the quadrilateral ABCD is 1050 cm^2 .

What is the area of the triangle ADC equal to?

A. 300 cm^2

B. 450 cm^2

C. 600 cm^2

D. None of the above

Answer:



Watch Video Solution

100. Let ABCD be a quadrilateral. Let the diagonals AC and BD meet at O. Let the perpendicular drawn from A to CD meet CD at E. Further, $AO:OC = BO:OD$, $AB = 30$ cm, $CD = 40$ cm and the area of the quadrilateral ABCD is 1050 cm^2 .

What is $\angle AEB$ equal to?

A. 30°

B. 45°

C. 60°

D. None of the above

Answer:



Watch Video Solution