MATHS

CDS PREVIOUS YEAR PAPER

PREVIOUS YEAR PAPER 2014 (ll)

Multiple Choice Questions

1. Pipe A can fill a tank in 3 hours. But there is a leakage also, due to which it takes 3.5 hours for the tank to be filled. How much time will the leakage take in emptying the tank if the tank is filled initially?

A. 21 hours

B. 20 hours

C. 18 hours

D. 0.5 hours

Answer:

2. A train takes 10 seconds to cross a pole and 20 seconds to cross a platform of length 200 m. What is the length of the train?

A. 50 m

B. 100 m

C. 150 m

D. 200 m

Answer:

3. A,B,C can do a piece of work individually in 8 ,10 and 15 days respectively. A and B start working but A quits after working for 2 days. After this ,C joins B till the completion of work . In how many days will the work be completed

A. $3\dfrac{8}{9}$ days

B. $5\dfrac{8}{9}$ days

C. $5\dfrac{2}{3}$ days

D. $6\dfrac{1}{18}$ days

Answer:

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4. The distance between two points (A and B is 110 km.

X starts running from point A at a speed of 60 km/hr

and Y starts running from point B at a speed of 50

km/hr at the same time. They meet at a point C,

somewhere on the line AB. What is the ratio of AC to BC?

A. $3:2$

B. 6:5

C. $3:4$

D. $4:3$

Answer:

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5. A is thrice as efficient as B and hence completes a work in 40 days less than the number of days taken by

B. What will be the number of days taken by both of them when working together?

A. 22.5 days

B. 15 days

C. 20 days

D. 18 days

Answer:

6. If 10 persons can dig 8 feet trench in 12 days, then how many days will 8 persons take to dig 6 feet

trench?

A. 10 days

B. 10.25 days

C. 11 days

D. 11.25 days

Answer:

7. The height of a tree varies as the square root of its

age (between 5 to 17 years). When the age of the tree

is 9 years, its height is 4 feet. What will be the height of the tree at the age of 16 years?

    A. 5 feet 4 inches

    B. 5 feet 5 inches

    C. 4 feet 4 inches

    D. 4 feet 5 inches

Answer:

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8. The ratio of ages of A and B is 2 : 5 and the ratio of ages of B and C is 3 : 4 What is the ratio of ages of A,

B and C?

A. $6:15:20$

B. $8:5:3$

C. $6:5:4$

D. $2:15:4$

Answer:

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9. When an article is sold at 20% discount, the selling

price is Rs 24, What will be the selling price when the

discount is 30% ?

A. Rs 25

B. Rs 23

C. Rs 21

D. Rs 20

Answer:

10. A shopkeeper sells his articles at their cost price but uses a faulty balance which reads 1000 g for 800 g. What is his actual profit percentage?

A. 25%

B. 20 %

C. 40 %

D. 30 %

Answer:

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11. The difference between compound interest and simple interest for 2 years at the rate of 10% over principal amount of Rs X is Rs 10. What is the value of X?

A. Rs 100

B. Rs 1,000

C. Rs 500

D. Rs 5,000

Answer:

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12. A sum of money becomes 3 times in 5 years at simple interest. In how many years will the same sum become 6 times at the same rate of simple interest?

A. 10 years

B. 12 years

C. 12.5 years

D. 10.5 years

Answer:

13. A man buys 200 oranges for Rs 1,000. How many oranges for Rs 100 can he sell so that his profit percentage is 25%?

A. 10

B. 14

C. 16

D. 20

Answer:

14. If $m\%$ of $m + n\%$ of n = 2 % of $(m \times n)$, then what percentage of m is n?

A. 50%

B. 75%

C. 100%

D. Cannot be determined due to insufficient data

Answer:

15. The edge of a cube is increased by 100% , then the lateral surface area of the cube is increased by _____ %

A. 150%

B. 200%

C. 300%

D. 400%

Answer:

16. How many pairs of positive integers m and n satisfy the equation $\dfrac{1}{m} + \dfrac{4}{n} = \dfrac{1}{12}$ where n is an odd integer less than 60?

A. 7

B. 5

C. 4

D. 3

Answer:

17. The sides of a triangle are in the ratio $\dfrac{1}{2} : \dfrac{1}{3} : \dfrac{1}{4}$. If the perimeter of the triangle is 52 cm, the length of the smallest side is

    A. 9 cm

    B. 10 cm

    C. 11 cm

    D. 12 cm

Answer:

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18. The diameter of a metallic sphere is 6 cm. The sphere is melted and drawn into a wire of uniform circular cross-section. If the length of the wire is 36 m, then what is its radius equal to?

    A. $0 \cdot$ cm

    B. $0 \cdot 01$ cm

    C. $0 \cdot 001$ cm

    D. $1 \cdot 0$ cm

Answer:

19. Consider all those two-digit positive integers less than 50, which when divided by 4 yield unity as remainder. What is their sum?

A. 310

B. 314

C. 318

D. 323

Answer:

20. If every side of an equilateral triangle is doubled, then the area of new triangle becomes k times the area of the old one. What is k equal to?

A. $\sqrt{3}$

B. 2

C. 4

D. 8

Answer:

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21. If $a_n = 3 - 4n$, then what is $a_1 + a_2 + a_3 + \ldots + a_n$ equal to ?

A. $-n(4n - 3)$

B. $-n(2n - 1)$

C. $-n^2$

D. $-n(2n + 1)$

Answer:

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22. A train travels at a speed of 40 km/hr and another train at a speed of 20 m/s. What is the ratio of speed of the first train to that of the second train?

A. $2:1$

B. $5:9$

C. $5:3$

D. $9:5$

Answer:

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23. $(x + y) : (x - y) = 3 : 5$ and xy = positive imply that

A. x and y are both positive

B. x and y are both negative

C. one of them is positive and one of them is negative

D. no real solutions for x and y exist

Answer:

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24. How many pairs of X and Y are possible in the number 763X4Y2, if the number is divisible by 9?

A. 8

B. 9

C. 10

D. 11

Answer:

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25. What is the remainder when 4^{1012} is divided by 7 ?

A. 1

B. 2

C. 3

D. 4

Answer:

26. Two concentric circle of radii 13cm and 12 cm. What is the length of the chord of the larger circle which is tangent to the smaller circle?

A. 10cm

B. 12

C. 18

D. 16

Answer:

27. What is the remainder when $(1235 \times 4523 \times 2451)$ is divided by 12 ?

A. 1

B. 3

C. 5

D. 7

Answer:

28. What is the remainder when $\left(17^{23} + 23^{23} + 29^{23}\right)$ is divided by 23 ?

A. 0

B. 1

C. 2

D. 3

Answer:

29. p, q and r are prime numbers such that $p < q < r < 13$. In how many cases would (p + q + r) also be a prime number?

A. 1

B. 2

C. 3

D. None of the above

Answer:

30. The LCM of two numbers is 90 times their HCF. The sum of LCM and HCF is 1456. If one of the numbers is 160, then what is the other number?

   A. 120

   B. 136

   C. 144

   D. 184

Answer:

31. The LCM of two integers is 1237, What is their HCF?

A. 37

B. 19

C. 1

D. Cannot be determined

Answer:

32. What is

$$\frac{1}{a-b} - \frac{1}{a+b} - \frac{2b}{a^2+b^2} - \frac{4b^3}{a^4+b^4} - \frac{8b^7}{a^8-b^8}$$

equal to ?

A. a+b

B. a-b

C. 1

D. 0

Answer:

33. A man rides one-third of the distance from A to B at the rate of x km/hr and the remainder at the rate of 2y km/hr. If he had travelled at a uniform rate of 6z km/hr, he could have ridden from A to B and back again in the same time. Which one of the following is correct?

   A. $z = x + y$

   B. $3z = x + y$

   C. $\dfrac{1}{z} = \dfrac{1}{x} + \dfrac{1}{y}$

   D. $\dfrac{1}{2z} = \dfrac{1}{x} + \dfrac{1}{y}$

Answer:

34. If $ax + by - 2 = 0$ and $ax + by = 1$, where $a \neq 0, b \neq 0$, then what is $(a^2x + b^2y)$ equal to ?

A. a+b

B. 2ab

C. $a^3 + b^3$

D. $a^4 + b^4$

Answer:

35. A sum becomes rs.872 in 2years 3months at the rate of simple interest of 4 percent p.a. then principle is:

A. a. 750rs.

B. b. 780rs.

C. c. 800rs.

D. d. none of them

Answer:

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36. $7^{10} - 5^{10}$ is divisible by

A. 10

B. 7

C. 5

D. 11

Answer:

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37. Consider the following statements in respect of four spheres A, B, C and D having respective radii 6, 8,

10 and 12 cm :

1. The surface area of sphere C is equal to the sum of surface areas of spheres A and B.

2. The volume of sphere D is equal to the sum of volumes of spheres A, B and C.

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:

38. What is the number of divisors of 360?

A. 12

B. 18

C. 24

D. None of the above

Answer:

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39. The multiplication of a three-digit number XY 5 with digit Z yields X 215. What is X+Y+Z equal to?

A. 13

B. 15

C. 17

D. 18

Answer:

40. If the equation $x^2 + 2(1 + k)x + k^2) = 0$ has equal roots, then what is the value of k?

A. $\dfrac{1}{2}$

B. $-\dfrac{1}{2}$

C. 1

D. -1

Answer:

41. If m and n are the roots of the equation $x^2 + ax + b = 0$, and m^2 and n^2 are the roots of the equation $x^2 - cx + d = 0$, then which of the following is/are correct?

1. $2b - a^2 = c$

2. $b^2 = d$

Select the correct answer using the code given below.

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer:

42. If $N^2 - 33, N^2 - 31$ and $N^2 - 29$ are prime numbers, then what is the number of possible values of N, where N is an integer?

A. 1

B. 2

C. 6

D. None of the above

Answer:

43. There are 48 cricket balls, 72 hockey balls and 84 tennis balls and they have to be arranged in several rows in such a way every row contains the same number of balls of one type. What is the minimum number of rows required for this to happen?

A. 12

B. 16

C. 17

D. 19

Answer:

44. The HCF of two natural numbers m and n is 24 and their product is 552. How many sets of values of m and n are possible ?

A. 1

B. 2

C. 4

D. No set of m and n is possible satisfying the given conditions

Answer:

45. If m and $n(m > n)$ are the roots of the equation

$$7(x + 2a)^2 + 3a^2 = 5a(7x + 23a)$$

where $a > 0$, then what is 3m-n equal to ?

A. 12a

B. 14a

C. 15a

D. 18a

Answer:

46. A person selling an article for Rs 96 finds that his loss percent is one-fourth of the amount of rupees that he paid for the article. What can be the cost price?

    A. Rs 160 only

    B. Rs 240 only

    C. Rs 160 or Rs 240

    D. Neither Rs 160 nor Rs 240

Answer:

47. If $(x + k)$ is a common factor of $(x^2 + px + q)$ are $(x^2 + lx + m)$, then the value of k is :

A. (d-b)/(c-a)

B. (d-b)/(a-c)

C. (d+b)/(c+a)

D. (d-b)/(c+a)

Answer:

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48. What is the remainder when $x^5 - 5x^2 + 125$ is divided by x+5 ?

A. 0

B. 125

C. -3125

D. 3125

Answer:

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49. What is the lowest common multiple of

$$ab(x^2 + 1) + x(a^2 + b^2) \text{ and } ab(x^2 - 1) + x(a^2 - b^2)$$

?

A. $(a^2 x^2 - b^2)(a + bx)$

B. $\left(a^2x^2 - b^2\right)\left(a + bx\right)^2$

C. $\left(a^2x^2 - b^2\right)\left(a - bx\right)$

D. $\left(a^2x^2 - b^2\right)\left(a - bx\right)(2)$

Answer:

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50. A certain number of two digits is three times the sum of its digits. If 45 is added to the number, the digits will be reversed. What is the sum of the squares of the two digits of the number?

A. 41

B. 45

C. 53

D. 64

Answer:

51. If from the top of a post a string twice the length of the post is stretched tight to a point on the ground, then what angle will the string make with the post?

A. $\dfrac{\pi}{6}$

B. $\dfrac{\pi}{4}$

C. $\dfrac{5\pi}{12}$

D. $\dfrac{\pi}{3}$

Answer:

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52. The price of a commodity increased by 5% from 2010 to 2011, 8% from 2011 to 2012 and 77% from 2012 to 2013. What is the average price increase (approximate) from 2010 to 2013?

A. $26\,\%$

B. 32 %

C. 24 %

D. 30 %

Answer:

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53. A railroad curve is to be laid on a circle. What radius (approximate) should be used if the track is to change direction by $25°$ in a distance of 120 m?

A. 300 m

B. 280 m

C. 275 m

D. 264 m

Answer:

54. If $0 < \theta < \dfrac{\pi}{4}$, then what is $\sqrt{1 - 2\sin\theta\cos\theta}$

equal to ?

A. $\cos\theta - \sin\theta$

B. $\sin\theta - \cos\theta$

C. $\pm(\cos\theta - \sin\theta)$

D. $\cos\theta\sin\theta$

Answer:

55. If $\tan\theta + \cot\theta = 2$, then what is $\sin\theta + \cos\theta$ equal to ?

A. a. $\dfrac{1}{2}$

B. b. $\dfrac{1}{\sqrt{3}}$

C. c. $\sqrt{2}$

D. d. 1

Answer:

56. What is $\dfrac{\sec x}{\cot x + \tan x}$ equal to ?

A. $\sin x$

B. $\cos x$

C. $\tan x$

D. $\cot x$

Answer:

57. From a certain point on a straight road, a person observes a tower in the west direction at a distance of 200 m. He walks some distance 'along the road and finds that the same tower is 300 m south of him. What is the shortest distance of the tower from the road?

A. $\dfrac{300}{\sqrt{13}}$ m

B. $\dfrac{500}{\sqrt{13}}$ m

C. $\dfrac{600}{\sqrt{13}}$ m

D. $\dfrac{900}{\sqrt{13}}$ m

Answer:

58. What is $\dfrac{\sin x - \cos x + 1}{\sin x + \cos x - 1}$ **equal to ?**

A. $\dfrac{\sin x - 1}{\cos x}$

B. $\dfrac{\sin x + 1}{\cos x}$

C. $\dfrac{\sin x - 1}{\cos x + 1}$

D. $\dfrac{\sin x + 1}{\cos x + 1}$

Answer:

59. What is $\left(\sin^2 x - \cos^2 x\right)$ **equal to ?**

A. $\sin^4 x - \cos^4 x$

B. $\sin^6 x - \cos^6 x$

C. $\cos^8 x - \sin^8 x$

D. $\sin^8 x - \cos^8 x$ `

Answer:

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60.   What

$(\sin x \cos y + \cos x \sin y)(\sin x \cos y - \cos x \sin y)$

equal to ?

A. $\cos^2 x - \cos^2 y$

B. $\cos^2 x - \sin^2 y$

C. $\sin^2 x - \cos^2 y$

D. $\sin^2 x - \sin^2 y$

Answer:

61. What is $(1 + \cot x - \cos ecx)(1 + \tan x + \sec x)$ equal to ?

A. 1

B. 2

C. sin x

D. cos x

Answer:

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62. What is

$$(\cos ecx - \sin x)(\sec x - \cos x)(\tan x + \cot x)$$

equal to ?

A. $\sin x + \cos x$

B. $\sin x - \cos x$

C. 2

D. 1

Answer:

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63. Consider the following statements :

1. $\sin 1^0 > 1$

2. $\cos 1^\circ < \cos 1$

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:

64. If sin x + cosec x =2, then what is $\sin^9 x + \cos ec^9 x$

equal to ?

A. 2

B. 18

C. 512

D. 1024

Answer:

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65. If $\sin x + \cos x = p$ and $\sin^3 x + \cos^3 x = q$. Then what is $p^3 - 3p$ equal to ?

A. 0

B. $-2q$

C. 2q

D. 4q

Answer:

66. What is the number of pairs of perpendicular planes in a cuboid?

A. 4

B. 8

C. 12

D. None of the above

Answer:

67. How many equilateral triangles can be formed by joining any three vertices of a cube?

    A. 0

    B. 4

    C. 8

    D. None of the above

Answer:

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68. ABCD is a trapezium in which AB is parallel to CD.

Let M be the midpoint of CD.

Consider the following statements :

1. Area of triangle ABM - Area of triangle ADM is always equal to area of triangle BCM, if AB = CD

2. Half of area of triangle ABM is equal to one-eighth of area of trapezium ABCD, if AB = CD.

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:

69. ABCD is a trapezium in which AB is parallel to CD.

Let M be the midpoint of CD.

Consider the following statements :

1. Area of triangle ABM - Area of triangle ADM is always equal to area of triangle BCM, if AB = CD

2. Half of area of triangle ABM is equal to one-eighth of area of trapezium ABCD, if AB = CD.

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:

70. ABCD is a parallelogram. P and R are the midpoints of DC and BC respectively. The line PR intersects the diagonal AC at Q . The distance CQ will be equal to

A. $\dfrac{AC}{4}$

B. $\dfrac{BD}{3}$

C. $\dfrac{BD}{4}$

D. $\dfrac{AC}{3}$

Answer:

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71. Consider the following statements in respect of an

equilateral triangle ABC.

1. The altitudes are congruent.

2. The three medians are congruent.

3. The centroid bisects the altitude.

Which of the above statements is/are correct ?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Answer:

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72. Consider the following: ABC and DEF are triangles in a plane such that AB is parallel to DE, BC is parallel to EF and CA is parallel to FD.

Statement-I : If angle ABC is a right angle, then angle

DEF is also a right angle.

Statement-II :

Triangles of the type. ABC and DEF are always congruent.

Which one of the following is correct in respect of the above statements?

A. Statement-I and Statement-II are correct and Statement-II is the correct explanation of Statement-I

B. Statement-I and Statement-II are correct and Statement-II is not the correct explanation of Statement-I

C. Statement-I is correct and Statement-II is

   incorrect

D. Statement-I is incorrect and Statement-II is

   correct

Answer:

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73. Let the incircle to a triangle ABC touch BC, AC and

AB respectively at the points X, Y and Z.

Statement-I :

If $AB > BC$, then $AB + AZ < BC + XC$

Statement-II :

$$AZ = AY$$

Which one of the following is correct in respect of the above statements?

A. Statement-I and Statement-II are correct and Statement--II is the correct explanation of Statement-I

B. Statement-I and Statement-II are correct and Statement-II is not the correct explanation of Statement-I

C. Statement-I is correct and Statement-II is incorrect

D. Statement-I is incorrect and Statement-II is correct

Answer:

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74. Let ABC be a triangle in which $\angle ACB = 60°$ and $AC = x < BC$. Let the circle with centre at C and radius x meet BC at D. Let CF be the perpendicular drawn from C meeting AD at F.

Statement-I :

Triangle ACD is isosceles but not equilateral

Statement-II :

DF = x/2

Which one of the following is correct in respect of the

above statements?

A. Statement-I and Statement-II are correct and

   Statement-II is the correct explanation of

   Statement ?

B. Statement- and Statement-II are correct and

   Statement-II is not the correct explanation of

   Statement-I

C. Statement- is correct and Statement-II is

   incorrect

D. Statement-I is incorrect and Statement-II is

correct

Answer:

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75. Bisectors of two adjacent angles A and B of a quadrilateral ABCD intersect each other at a point P. Which one of the following is correct?

A. $2\angle APB = \angle C + \angle D$

B. $\angle APB = \angle C + \angle D$

C. $\angle APB = 180° - (\angle A + \angle B)$

D. $\angle APB = 180° - (\angle C + \angle D)$

Answer:

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76. In a triangle ABC, AD is the median through A and

E is the midpoint of AD, and BE produced meets AC at

F. Then AF is equal to

A. AC/5

B. AC/4

C. AC/3

D. AC/2

Answer:

77. Three straight lines are drawn through the three vertices of a triangle ABC, the line through each vertex being parallel to the opposite side. The triangle DEF is bounded by these parallel lines. Consider the following statements in respect of the triangle DEF :

1. Each side of triangle DEF is double the side of triangle ABC to which it is parallel.

2. Area of triangle DEF is four times the area of triangle ABC.

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:

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78. Let ABCD be a parallelogram. Let X and Y be the midpoints of the sides BC and AD respectively. Let M and N be the midpoints of the sides AB and CD respectively.

Consider the following statements :

1. The straight line MX cannot be parallel to YN.

2. The straight lines AC, BD, XY and MN meet at a point.

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:

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79. The chord of an arc of a circle is of length x, the height of the arc is y and the radius of the circle is z. Which one of the following is correct?

A. $y(2z - y) = x^2$

B. $y(2z - y) = 4x^2$

C. $2y(2z - y) = x^2$

D. $4y(2z - y) = x^2$

Answer:

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80. In a triangle ABC, $\angle B = 2\angle C = 2\angle A$. What is the ratio of AC to AB ?

   A. $\sqrt{2} : 1$

   B. $\sqrt{3} : 1$

   C. $1 : 1$

   D. $1 : \sqrt{2}$

Answer:

81. What is the maximum distance between two points of a cube of side 2 cm ?

A. $\sqrt{3}$ cm

B. $2\sqrt{3}$ cm

C. $4\sqrt{3}$ cm

D. $2\sqrt{2}$ cm

Answer:

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82. The areas of the three adjacent faces of a cuboidal box are x, 4x and 9x square unit. What is the volume of the box?

A. $6x^2$ cubic unit

B. $6x^{3/2}$ cubic unit

C. $3x^{3/2}$ cubic unit

D. $2x^{3/2}$ cubic unit

Answer:

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83. A cylinder circumscribes a sphere . The ratio of their volumes is :

A. $2:3$

B. $1:3$

C. $3:4$

D. $3:2$

Answer:

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84. If for a triangle the radius of the circumcircle is double the radius of the inscribed circle, then which one of the following is correct?

A. The triangle is right angled

B. The triangle is isosceles

C. The triangle is equilateral

D. None of the above

Answer:

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85. A toy is in the form of a cone mounted on the hemisphere with the same radius. The diameter of the base of the conical portion is 12 cm and its height is 8 cm.

What is the total surface area of the toy?

A. $132\pi cm^2$

B. $112\pi cm^2$

C. $96\pi cm^2$

D. $66\pi cm^2$

Answer:

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86. A toy is in the form of a cone mounted on the hemisphere with the same radius. The diameter of the base of the conical portion is 12 cm and its height is 8 cm.

What is the volume of the toy?

A. $180\pi cm^3$

B. $240\pi cm^3$

C. $300\pi cm^3$

D. $320\pi cm^3$

Answer:

87. A right triangle having hypotenuse 5 cm and legs in the ratio 3:4 is made to revolve about its hypotenuse. What is the volume of the double cone so formed? $(\pi = 3.14)$

    A. $30.14cm^3$

    B. $34.24cm^3$

    C. $37.68cm^3$

    D. $39.24cm^3$

Answer:

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88. items that follow : A right triangle having hypotenuse 25 cm and legs in the ratio 3:4 is made to revolve about its hypotenuse. $(\pi = 3.14)$

What is the surface area of the double cone so formed?

A. $1101.2 cm^2$

B. $1111.4 cm^2$

C. $1310.4 cm^2$

D. $1318.8 cm^2$

Answer:

89. items that follow : A right triangle having hypotenuse 25 cm and legs in the ratio 3:4 is made to revolve about its hypotenuse. $(\pi = 3.14)$

Consider the following statements :

The volume of the cone generated when the triangle is made to revolve about its longer leg is same as the volume of the cone generated when the triangle is made to revolve about its shorter leg.

2. The sum of the volume of the cone generated when the triangle is made to revolve about its longer leg and the volume of the cone generated when the triangle is made to revolve about its shorter leg is

equal to the volume of the double cone generated when the triangle is made to revolve about its hypotenuse.

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:

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90. A piece of land is in the form of a parallelogram and the perimeter of the land is 86 m. The length of one side exceeds the other by 13 m and one of the diagonals is 41 m.

What is the shorter height of the parallelogram?

A. $9m$

B. $96m^2$

C. $126m^2$

D. $252m^2$

Answer:

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91. A piece of land is in the form of a parallelogram and the perimeter of the land is 86 m. The length of one side exceeds the other by 13 m and one of the diagonals is 41 m.

What is the area of the parallelogram ?

A. $126m^2$

B. $198m^2$

C. $252m^2$

D. $284m^2$

Answer:

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92. A piece of land is in the form of a parallelogram and the perimeter of the land is 86 m. The length of one side exceeds the other by 13 m and one of the diagonals is 41 m.

Consider the following statements :

1. The difference between the diagonals of the parallelogram is more than 20 m.

2. The difference between the heights of the parallelogram is more than 10 m.

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:

93. If one of the roots of the equation $px^2 + qx + r = 0$ is three times the other, then which one of the following relations is correct ?

A. $3q^2 = 16pr$

B. $q^2 = 24pr$

C. $p = q + r$

D. $p + q + r = 1$

Answer:

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94. If the radius of a circle is increased by 6%, then its area will increase by

A. $6\ \%$

B. $9\ \%$

C. $12.36\ \%$

D. $16.64\ \%$

Answer:

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95. The class which has maximum frequency is known as

    A. median class

    B. mean class

    C. modal class

    D. None of the above

Answer:

96. Consider the following statements related to cumulative frequency polygon of a frequency distribution, the frequencies being cumulated from the lower end of the range :

1. The cumulative frequency polygon gives an equivalent representation of frequency distribution table.

2. The cumulative frequency polygon is a closed polygon with one horizontal and one vertical side. The other sides have non-negative slope.

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:

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97. Consider the following data :

1. Number of complaints lodged due to road accidents

in a State within a year for 5 consecutive years

2. Budgetary allocation of the total available funds to

the various items of expenditure

Which of the above data is/are suitable for representation of a pie diagram?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer:

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98. When we take class intervals on the x-axis and corresponding frequencies on the y-axis, and draw

rectangles with the areas proportional to the frequencies of the respective class intervals, the graph so obtained is called

A. bar diagram

B. frequency curve

C. ogive

D. None of the above

Answer:

99. If x_i' s are the midpoints of the class intervals of grouped data, f_i's are the corresponding frequencies and $\bar{x}$ is the mean, then what is $\Sigma(f_ix_i - \bar{x})$ equal to ?

A. 0

B. -1

C. 1

D. 2

Answer:

100. Ten observations 6, 14, 15, 17, x + 1, 2x – 13, 30, 32, 34, 43 are written in ascending order. The median of the data is 24. What is the value of x?

A. 15

B. 18

C. 20

D. 24

Answer:

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