CDS - I 2017
Elementary Maths Question Paper

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1. What is $\sqrt{\dfrac{0.064 \times 6.25}{0.081 \times 4.84}}$ equal to?
   A. $\dfrac{10}{99}$ B. $\dfrac{100}{99}$
   C. 9 D. 99

2. $(x+4)$ is a factor of which one of the following expressions?
   A. $x^2 - 7x + 44$ B. $x^2 + 7x - 44$
   C. $x^2 - 7x - 44$ D. $x^2 + 7x + 44$

3. If α and β are the roots of the quadratic equation $2x^2 + 6x + k = 0$, where $k < 0$, then what is the maximum value of $\dfrac{\alpha}{\beta} + \dfrac{\beta}{\alpha}$?
   A. 2 B. - 2
   C. 9 D. -9

4. Consider the following statements :
   1. If $a = bc$ with HCF (b, c) = 1, then HCF (c, bd) = HCF (c, d).
   2. If a = bc with HCF (b, c) = 1, then LCM (a, b) = LCM (c, bd)
   ` Which of the above statements is/are correct?
   A. 1 only B. 2 only
   C. Both 1 and 2 D. Neither 1 nor 2

5. What is the square root of $\dfrac{(0.35)^2 + 0.70 + 1}{2.25} + 0.19$?
   A. 1 B. 2
   C. 3 D. 4

6. What is the number of digits in 2^{40} ? (Given that $\log_{10} 2 = 0.301$)
   A. 14 B. 13
   C. 12 D. 11

7. If one root of $(a^2 - 5a + 3)x^2 + (3a - 1)x + 1 = 0$ is twice the other, then what is the value of 'a'?
   A. $\dfrac{2}{3}$ B. $-\dfrac{2}{3}$
   C. $\dfrac{1}{3}$ D. $-\dfrac{1}{3}$

8. What is the remainder when the number $(4444)^{4444}$ is divided by 9?
   A. 4 B. 6
   C. 7 D. 8

9. If $x = \dfrac{\sqrt{a+b} - \sqrt{a-b}}{\sqrt{a+b} + \sqrt{a-b}}$, then what is $bx^2 - 2ax + b$ equal to $(b \neq 0)$?
   A. 0 B. 1
   C. ab D. 2ab

10. What is the value of $\dfrac{(443 + 547)^2 + (443 - 547)^2}{443 \times 443 + 547 \times 547}$?
    A. 0 B. 1
    C. 2 D. 3

11. If $x = t^{\frac{1}{t-1}}$ and $y = t^{\frac{t}{t-1}}, t > 0, t \neq 1,$ then what is the relation between x and y?
    A. $y^x = x^{1/y}$ B. $x^{1/y} = y^{1/x}$
    C. $x^y = y^x$ D. $x^y = y^{1/x}$

12. If A : B = 3 : 4, then what is the value of the expression $\left(\dfrac{3A^2 + 4B}{3A - 4B^2}\right)$?
    A. $\dfrac{43}{55}$
    B. $-\dfrac{43}{55}$
    C. $\dfrac{47}{55}$
    D. Cannot be determined

13. If A = {x : x is a multiple of 7},
    B = {x : x is a multiple of 5} and
    C = {x : x is a multiple of 35},
    Then which one of the following is a null set?
    A. $(A - B) \cup C$ B. $(A - B) - C$
    C. $(A \cap B) \cap C$ D. $(A \cap B) - C$

14. If $x = 2 + 2^{2/3} + 2^{1/3}$, then what is the value of $x^3 - 6x^2 + 6x$?
    A. 3 B. 2
    C. 1 D. 0

15. If $\sqrt{\dfrac{x}{y}} = \dfrac{24}{5} + \sqrt{\dfrac{y}{x}}$ and $x + y = 26$, then what is the value of xy?
    A. 5 B. 15
    C. 25 D. 30

16. What is the solution of the equation $x\log_{10}\left(\dfrac{10}{3}\right) + \log_{10} 3 = \log_{10}(2 + 3^x) + x$?
    A. 10 B. 3
    C. 1 D. 0

17. If α and β are the roots of the equation $x^2 + px + q = 0$, then what is $\alpha^2 + \beta^2$ equal to?
    A. $p^2 - 2q$ B. $q^2 - 2p$
    C. $p^2 + 2q$ D. $q^2 - q$

18. If $a^3 = 335 + b^3$ and $a = 5 + b$, then what is the value of $a + b$ (given that $a > 0$ and $b > 0$)?
    A. 7   B. 9
    C. 16   D. 49

19. If $9^x 3^y = 2187$ and $2^{3x} 2^{2y} - 4^{xy} = 0$, then what can be the value of $(x + y)$?
    A. 1   B. 3
    C. 5   D. 7

20. The pair of linear equations $kx + 3y + 1 = 0$ and $2x + y + 3 = 0$ intersect each other, if
    A. $k = 6$ B. $k \neq 6$
    C. $k = 0$ D. $k \neq 0$

21. The number of prime number which are less than 100 is
    A. 24   B. 25
    C. 26   D. 27

22. The cost of a diamond varies directly as the square of its weight .A diamond broke into four pieces with their weights in the ratio of 1 : 2 : 3 : 4. If the loss in total value of the diamond was ₹ 70,000, what was the price of the original diamond?
    A. ₹ 1,00,000   B. ₹ 1,40,000
    C. ₹ 1,50,000   D. ₹ 1,75,000

23. In a 100 m race, A runs at a speed of $\frac{5}{3}$ If A gives a start of 4 m to B and still beats him by 12 seconds, what is the speed of B?
    A. $\frac{5}{4}$ m/s   B. $\frac{7}{5}$ m/s
    C. $\frac{4}{3}$ m/s   D. $\frac{6}{5}$ m/s

24. If 15 men take 21 days of 8 hours each to do a piece of work, then what is the number of days of 6 hours each that 21 women would take, if 3 women would do as much work as 2 men?
    A. 18   B. 20
    C. 25   D. 30

25. What number must be subtracted from both the numerator and the denominator of the fraction $\frac{27}{35}$ so that it becomes $\frac{2}{3}$?
    A. 6   B. 8
    C. 9   D. 11

26. A sum of ₹ 8,400 was taken as a loan. This is to be paid in two equal instalments. If the rate of interest is 10% per annum, compounded annually, then the value of each instalment is
    A. ₹ 4,200   B. ₹ 4,480
    C. ₹ 4,840   D. None of the above

27. Leela got married 6 years ago. Today her age is $1\frac{1}{4}$ times her age at the time of her marriage. Her son's age is $\frac{1}{10}$ times her age.
    What is the present age of her son?
    A. 1 years   B. 2 years
    C. 3 years   D. 4 years

28. A and B working together can finish a piece of work in 12 days while B alone can finish it in 30 days. In how many days can A alone finish the work?
    A. 18 days   B. 20 days
    C. 24 days   D. 25 days

29. The value of x which satisfy the equation $5^{1+x} + 5^{1-x} = 26$ are
    A. -1, 1   B. 0, 1
    C. 1, 2   D. -1, 0

30. If 5 men can do a piece of work in 10 days and 12 women can do the same work in 15 days, the number of days required to complete the work by 5 men & 6 women is
    A. $7\frac{1}{2}$ days   B. 8 days
    C. $9\frac{1}{2}$ days   D. 12 days

31. A passenger train departs from Delhi at 6 p.m. for Mumbai. At 9 p.m., an express train, whose average speed exceeds that of the passenger train by 15 km/hour leaves Mumbai for Delhi. Two trains meet each other mid-route. At what time do they meet, given that the distance between the cities is 1080 km?
    A. 4 p.m.   B. 2 a.m.
   C. 12 midnight   D. 6 a.m.

32. In a class of 49 students, the ratio of girls to boys is 4 : 3. If 4 girls leave the class, the ratio of girls to boys would be
    A. 11 : 7
    B. 8 : 7
    C. 6 : 5
    D. 9 : 8

33. If $a + b = 5$ and $ab = 6$, then what is the value of?
    A. 35
    B. 40
    C. 90
    D. 125

34. Rajendra bought a mobile with 25% discount on the selling price. If the mobile cost him ₹ 4,875, what is the original selling price of the mobile?
    A. ₹ 6,300
    B. ₹ 6,400
    C. ₹ 6,500
    D. ₹ 6,600

35. A 225 m long train is running at a speed of 30 km/hour. How much time does it take to cross a man running at 3 km/hours in the same direction?
    A. 40 seconds
    B. 30 seconds
    C. 25 seconds
    D. 15 seconds

36. Which one among the following is the largest?
    A. $\dfrac{7}{9}$
    B. $\dfrac{11}{14}$
    C. $\dfrac{3}{4}$
    D. $\dfrac{10}{13}$

37. The difference between the simple and the compound interest on a certain sum of money at 4% per annum in 2 years is ₹ 10. What is the sum?
    A. ₹ 5,000
    B. ₹ 6,000
    C. ₹ 6,250
    D. ₹ 7,500

38. If a% of $a + b$% of $b = 2$% of ab, then what percent of a is b?
    A. 50%
    B. 75%
    C. 100%
    D. Cannot be determined

39. $\dfrac{5}{9}^{th}$ part of the population in a village are males. If 30% of the males are married, the percentage of unmarried females in the total population is
    A. $20\dfrac{2}{9}$
    B. $27\dfrac{2}{9}$
    C. $27\dfrac{7}{9}$
    D. $29\dfrac{2}{9}$

40. Sunil wants to speed ₹ 200 on two types of sweets, costing ₹ 7 and ₹ 10 respectively. What is the maximum number of sweets he can get so that no money is left over?
    A. 25
    B. 26
    C. 27
    D. 28

41. What is the LCM of $x^3 + 8, x^2 + 5x + 6$ and $x^3 + 4x^2 + 4x$?
    A. $x(x+2)^2(x+3)(x^2 - 2x + 4)$
    B. $x(x-2)^2(x-3)(x^2 + 2x + 4)$
    C. $(x+2)^2(x+3)(x^2 - 2x + 4)$
    D. $(x-2)^2(x-3)(x^2 - 2x + 4)$

42. The HCF of two expressions p and q is 1. What is the reciprocal of their LCM?
    A. $p + q$
    B. $p - q$
    C. pq
    D. $(pq)^{-1}$

43. What is the value of $\sqrt[3]{4\dfrac{12}{125}}$?
    A. $1\dfrac{3}{5}$
    B. $1\dfrac{2}{5}$
    C. $1\dfrac{4}{5}$
    D. $2\dfrac{2}{5}$

44. A thief is spotted by a policeman from a distance of 100 m. When the policeman starts the chase, the thief also starts running. If the speed of the thief is 8 km/hours and that of the policeman is 10 km/hour, then how far will the thief have to run before he is overtaken?
    A. 200 m
    B. 300 m
    C. 400 m
    D. 500 m

45. Aman and Alok attempted to solve a quadratic equation. Aman made a mistake in writing down the constant term and ended up in roots (4, 3). Alok made a mistake in writing down the coefficient of X to get roots (3, 2). The correct roots of the equation are
    A. -4, -3
    B. 6, 1
    C. 4, 3
    D. -6, -1

46. Consider the following statements :
    1. Of two consecutive integers, one is even.
    2. Square of an odd integer is of the form $8n + 1$.
    Which of the above statements is/are correct?
    A. 1 only
    B. 2 only
    C. Both 1 and 2
    D. Neither 1 nor 2

47. The system of equations $2x + 4y = 6$ and $4x + 8y = 8$ is
    A. Consistent with a unique solution
    B. Consistent with infinitely many solutions
    C. Inconsistent
    D. None of the above

48. $\left(N^{p-1} - 1\right)$ is a multiple of p, if N is prime to p and p is a
    A. Prime number
    B. Rational number
    C. Real number
    D. Composite number

49. The ratio of two numbers is 1 : 5 and their product is 320. What is the difference between the square of these two numbers?
    A. 1024   B. 1256
    C. 1536   D. 1640

50. 25 kg of alloy X is mixed with 125 kg of alloy Y. If the amount of lead and tin in the alloy X is in the ratio 1 : 2 and the amount of lead and tin in the alloy Y is in the ratio 2 : 3, then what is the ratio of lead to tin in the mixture?
    A. 1 : 2   B. 2 : 3
    C. 3 : 5   D. 7 : 11

51. The mean of 5 numbers is 15. If one more number is included, the mean of the 6 numbers becomes 17. What is the included number?
    A. 24   B. 25
    C. 26   D. 27

52. The mean marks obtained by 300 students in a subject are 60. The mean of top 100 students was found to be 80 and the mean of last 100 students was found to be 50. The mean marks of the remaining 100 students are
    A. 70   B. 65
    C. 60   D. 50

53. Consider the following distribution :

Class	Frequency
0 – 20	17
20 – 40	28
40 – 60	32
60 – 80	F
80 – 100	19

If the mean of the above distribution is 50, what is the value of f?
    A. 24   B. 34
    C. 56   D. 96

54. In a pie diagram, there are four slices with angles 150º, 90º, 60º and 60º. A new pie diagram is formed by deleting one of the slices having angle 60 in the given pie diagram. In the new pie diagram
    A. The largest slice has angle 150º
    B. The smallest slice has angle 70º
    C. The largest slice has angle 180º
    D. The smallest slice has angle 90º

55. In an asymmetrical distribution, if the mean and median of the distribution are 270 and 220 respectively, then the mode of the data is
    A. 120   B. 220
    C. 280   D. 370

56. Let a, b, c, d, e, f, g be consecutive even numbers and j, k, l, m, n be consecutive odd numbers. What is the average of all the numbers?
    A. $\dfrac{3(a+n)}{2}$
    B. $\dfrac{(5l+7d)}{4}$
    C. $\dfrac{(a+b+m+n)}{4}$
    D. None of the above

57. An individual purchases three qualities of pencils. The relevant data is given below :

Quality	Price per pencil (in ₹)	Money spent (in ₹)
A	1.00	50
B	1.50	x
C	2.00	20

It is known that the average price per pencil is ₹ 1.25. Wwhat is the value of x?
    A. ₹ 10   B. ₹ 30
    C. ₹ 40   D. ₹ 60

58. Consider the following frequency distribution :

x	Frequency	Cumulative frequency
1	8	8
2	10	18
3	F_1	29
4	F_2	45

What are the values of f_1 and f_2 respectively?
    A. 10 and 17   B. 17 and 10
   C. 11 and 16   D. 16 and 11

59. If D is the number of degrees and R is the number of radians in an angle θ, then which one of the following is correct?
    A. $\pi D = 180R$
    B. $\pi D = 90R$
    C. $\pi R = 180D$
    D. $\pi R = 90D$

60. What is the minimum value of $9\tan^2\theta + 4\cot^2\theta$?
    A. 6
    B. 9
    C. 12
    D. 13

61. If $x\sin\theta = y\cos\theta = \dfrac{2z\tan\theta}{1-\tan^2\theta}$, then what is $4z^2\left(x^2+y^2\right)$ equal to?
    A. $\left(x^2+y^2\right)^3$
    B. $\left(x^2-y^2\right)^2$
    C. $\left(x^2-y^2\right)^3$
    D. $\left(x^2+y^2\right)^2$

62. If $\cos\theta_1 + \cos\theta_2 + \cos\theta_3 = 3,$ then what is $\sin\theta_1 + \sin\theta_2 + \sin\theta_3$ equal to?
    A. 0
    B. 1
    C. 2
    D. 3

63. What is the value of θ which satisfies the equation $\cos\theta + \tan\theta = 1$?
    A. 0º
    B. 30º
    C. 45º
    D. 60º

64. What is the value of $\sin x\sqrt{\dfrac{1}{1+\cos x}+\dfrac{1}{1-\cos x}}$?
    A. $\sqrt{2}$
    B. $2\sqrt{2}$
    C. $\sqrt{2}\tan x$
    D. 0

65. What is $\dfrac{\cos^4 A - \sin^4 A}{\cos^2 A - \sin^2 A}$ equal to?
    A. $\cos^2 A - \sin^2 A$
    B. $\cos A - \sin A$
    C. 1
    D. 2

66. If $7\sin^2 x + 3\cos^2 x = 4,\quad 0 < x < 90^\circ,$ then what is the value of tan x?
    A. $\sqrt{2}$
    B. 1
    C. $\dfrac{\sqrt{3}}{2}$
    D. $\dfrac{1}{\sqrt{3}}$

67. An aeroplane flying at a height of 300 m above the ground passes vertically above another plane at an instant when the angles of elevation of the two planes from the same point on the ground are 60 and 45 respectively. What is the height of the lower plane from the ground?

A. $100\sqrt{3}\,$m
B. $\dfrac{100}{\sqrt{3}}\,$m
C. $50\sqrt{3}\,$m
D. $150\left(\sqrt{3}+1\right)$m

68. If $x = a\cos\theta + b\sin\theta$ and $y = a\sin\theta - b\cos\theta$, then what is $x^2 + y^2$ equal to?
    A. $2ab$
    B. $a+b$
    C. a^2+b^2
    D. a^2-b^2

69. From the top of a building 90 m high, the angles of depression of the top and the bottom of a tree are 30 and 45 respectively. What is the height of the tree?
    A. $30\sqrt{3}$ m
    B. $90 - 30\sqrt{3}$ m
    C. $90 + 30\sqrt{3}$ m
    D. $60 + 30\sqrt{3}$ m

70. Which one of the following triples does not represent the sides of a triangle?
    A. (3, 4, 5)
    B. (4, 7, 10)
    C. (3, 6, 8)
    D. (2, 3, 6)

71. If the perimeter of a rectangle is 10 cm and the area is 4 cm², then its length is
    A. 6 cm
    B. 5 cm
    C. 4.5 cm
    D. 4 cm

72. The angles of a triangle are in the ratio 2 : 4 : 3. The smallest angle of the triangle is.
    A. 20º
    B. 40º
    C. 50º
    D. 60º

73. A ball of radius 1 cm is put into a cylindrical pipe so that it fits inside the pipe. If the length of the pipe is 14 m, what is the surface area of the pipe?
    A. 2200 square cm
    B. 4400 square cm
    C. 8800 square cm
    D. 17600 square cm

74. The areas of two circular fields are in the ratio 16 : 49. If the radius of the bigger field is 14 m, then what is the radius of the smaller field?
    A. 4 m
    B. 8 m
    C. 9 m
    D. 10 m

75. Let ABCD be a rectangle. Let P, Q, R, S be the mid-points of sides AB, BC, CD, DA respectively. Then the quadrilateral PQRS is a
    A. Square
    B. Rectangle, but need not be a square
    C. Rhombus, but need not be a square
    D. Parallelogram, but need not be a rhombus

76. Let P, Q, R be the mid-points of sides AB, BC, CA respectively of a triangle ABC. If the area of the triangle ABC is 5 square units, then the area of the triangle PQR is

   A. $\dfrac{5}{3}$ square units

   B. $\dfrac{5}{2\sqrt{2}}$ square units

   C. $\dfrac{5}{4}$ square units

   D. 1 square units

77. If each of the dimensions of a rectangle is increased by 200%, the area is increased by
   A. 300%   B. 400%
   C. 600%   D. 800%

78. Three circles each of radius 3.5 cm touch one another. The area subtended between them is

   A. $6\left(\sqrt{3}\pi - 2\right)$ square units

   B. $6\left(2\pi - \sqrt{3}\right)$ square units

   C. $\dfrac{49}{8}\left(2\sqrt{3} - \pi\right)$ square units

   D. $\dfrac{49}{8}\left(\sqrt{3} - \pi\right)$ square units

79. The area of a regular hexagon of side 'a' is equal to

   A. $\dfrac{\sqrt{2}}{3}a^2$ square units

   B. $\dfrac{3\sqrt{3}}{2}a^2$ square units

   C. $\dfrac{1}{3}a^2$ square units

   D. $\dfrac{\sqrt{3}}{2}a^2$ square units

80. ABCDEF is a regular polygon. Two poles at C and D are standing vertically and subtend angles of elevation 30° and 60° at A respectively. What is the ratio of the height of the pole at C to that of the pole at D?

   A. 1 : 1   B. $1 : 2\sqrt{3}$

   C. $2\sqrt{3} : 1$ D. $2 : \sqrt{3}$

81. Two parallel chords of a circle whose diameter is 13 cm are respectively 5 cm and 12 cm in length. If both the chords are on the same side of the diameter, then the distance between these chords is
   A. 5.5 cm   B. 5 cm
   C. 3.5 cm   D. 3 cm

82. If the radius of a right circular cone is increased by p% without increasing its height, then what is the percentage increase in the volume of the cone?

   A. p^2 B. $2p^2$

   C. $\dfrac{p^2}{100}$ D. $p\left(2 + \dfrac{p}{100}\right)$

83. A copper wire when bent in the form of a square encloses an area of 121 cm². If the same wire is bent in the form of a circle, it encloses an area equal to
   A. 121 cm²   B. 144 cm²
   C. 154 cm²   D. 168 cm²

84. ABC is a triangle and D is a point on the side BC. If BC = 12 cm, BD = 9 cm and ∠ADC = ∠BAC, then the length of AC is equal to
   A. 5 cm   B. 6 cm
   C. 8 cm   D. 9 cm

85. If the surface area of a sphere is reduced to one-ninth of the area, its radius reduces to
   A. One-fourth   B. One-third
   C. One-fifth   D. One-ninth

86. In a trapezium ABCD, AB is parallel to CD and the diagonals intersect each other at O. What is the ratio of OA to OC equal to?
   A. Ratio of OB to OD
   B. Ratio of BC to CD
   C. Ratio of AD to AB
   D. Ratio of AC to BD

87. Ice-cream, completely filled in a cylinder of diameter 35 cm and height 32 cm, is to be served by completely filling identical disposable cones of diameter 4 cm and height 7 cm. The maximum number of persons that can be served in this way is
   A. 950   B. 1000
   C. 1050   D. 1100

88. The radius of a circle is increased so that its circumference increases by 15%. The area of the circle will increase by
   A. 31.25%   B. 32.25%
   C. 33.25%   D. 34.25%

89. ABCD is a rectangle. The diagonals AC and BD intersect at O. If AB = 32 cm and AD = 24 cm, then what is OD equal to?
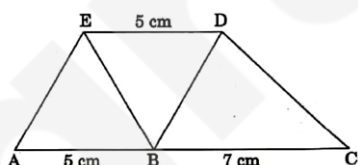   A. 22 cm   B. 20 cm
   C. 18 cm   D. 16 cm

90. A field is divided into four regions as shown in the given figure. What is the area of the field in square metre?
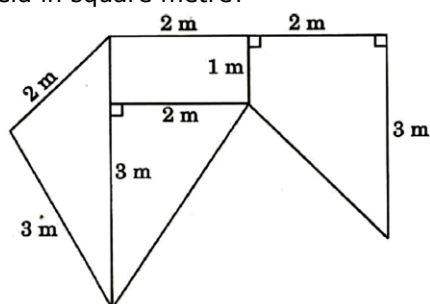

A. $6 + \dfrac{3}{4}\sqrt{5}$ B. $5 + \dfrac{3}{2}\sqrt{3}$

C. $9 + \dfrac{3}{4}\sqrt{15}$ D. $7 + 2\sqrt{2}$

91. In the figure given below, D is the diameter of each circle. What is the diameter of the shaded circle?
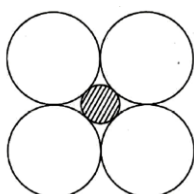
A. $D\left(\sqrt{2} - 1\right)$ B. $D\left(\sqrt{2} + 1\right)$

C. $D\left(\sqrt{2} + 2\right)$ D. $D\left(2 - \sqrt{2}\right)$

92. In the figure given below, AC is perellel to ED and AB = DE= 5 cm and BC = 7 cm. What is the area ABDE : area BDE : area BCD equal to?
A. 10 : 5 : 7   B. 8 : 4 : 7
C. 2 : 1 : 2   D. 8 : 4 : 5

93. In the figure given below, PQRS is a parallelogram. PA bisects angle P and SA bisects angle S. What is angle PAS equal to?
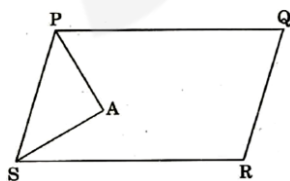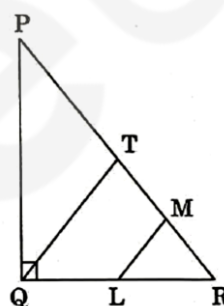

A. 60°   B. 75°
C. 90°   D. 100°

94. In the figure given below, $\angle A = 80°$ and $\angle ABC = 60°$. BD and CD bisect angles B and C respectively. What are the values of X and Y respectively?
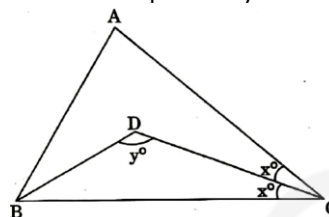
A. 10 and 130
B. 10 and 125
C. 20 and 130
D. 20 and 125

95. In the figures given below, PQR is a non-isosceles right-angled triangle, right angled at Q. If LM and QT are parallel and QT = PT, then what is $\angle$RLM equal to?

A. $\angle$PQT   B. $\angle$LRM
C. $\angle$RML   D. $\angle$QPT

96. In the figure given below, PQ is parallel to RS and PR is parallel to QS. If $\angle LPR = 35°$ and $\angle UST = 70°$, then what is $\angle MPQ$ equal to?
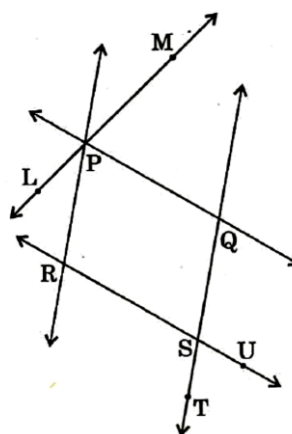

A. 55°   B. 70°
C. 75°   D. 80°

97. In the figure given below, ABC is a triangle with AB = BC and D is an interior point of the triangle ABC such that
    Consider the following statements :
    1. Triangle ADC is an isosceles triangle.
    2. D is the centroid of the triangle ABC.
    3. Triangle ABD is congruent to the triangle CBD.
    Which of the above statements are correct?
    A. 1 and 2 only   B. 2 and 3 only
    C. 1 and 3 only   D. 1, 2 and 3

98. In the figure given below, M is the mid-point of AB and $\angle DAB = \angle CBA$ and $\angle AMC = \angle BMD$. Then the triangle ADM is congruent to the triangle BCM by
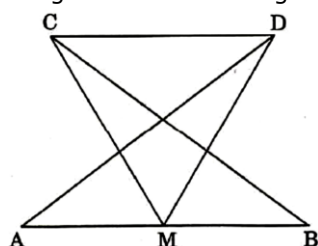
    A. SAS rule   B. SSS rule
    C. ASA rule   D. AAA rule

99. ABCD is a square. X is the mid-point of AB and Y is the mid-point of BC.
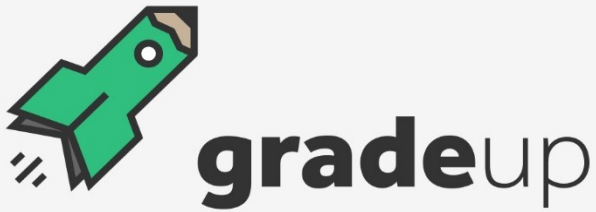   Consider the following statements :
    1. Triangles ADX and BAY are congruent.
    2. $\angle DXA = \angle AYB$.
    3. DX is inclined at an angle 60° with AY.
    4. DX is not perpendicular to AY.
    Which of the above statements are correct?
    A. 2, 3 and 4 only   B. 1, 2 and 4 only
    C. 1, 3 and 4 only   D. 1 and 2 only

100. From an aeroplane vertically over a straight horizontal road, the angles of depression of two consecutive kilometer-stones on the opposite sides of the aeroplane are observed to be α and β. The height of the aeroplane above the road is

    A. $\dfrac{\tan \alpha + \tan \beta}{\tan \alpha \, \tan \beta}$ B. $\dfrac{\tan \alpha \, \tan \beta}{\tan \alpha + \tan \beta}$

    C. $\dfrac{\cot \alpha \, \cot \beta}{\cot \alpha + \cot \beta}$ D. $\dfrac{\cot \alpha + \cot \beta}{\cot \alpha \, \cot \beta}$

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