

Mathematical Prodigy : T. A. Sarasvati Amma



T. A. Sarasvati Amma was a pioneering Indian mathematician, scholar, teacher, and historian of mathematics who made important contributions to the study of ancient and medieval Indian mathematics. She is particularly remembered for her research on geometry and for bringing greater attention to the mathematical achievements of India's early scholars.

Her life and work demonstrate how mathematics can be studied not only as a subject of calculation but also as an important part of history and culture.

T. A. Sarasvati Amma was born on 26 December 1918 in Cherpulassery, in present-day Palakkad district of Kerala. She was the second daughter of Kuttimalu Amma and Marath Achutha Menon. At a time when opportunities for women to pursue higher education and academic careers were comparatively limited, Sarasvati Amma developed a strong interest in mathematics and Sanskrit. Her education eventually enabled her to combine these two disciplines in a unique and productive way. She earned her basic degree in Mathematics and Physics from the University of Madras. Later, she studied Sanskrit at Banaras Hindu University (BHU), where she was associated with the renowned Sanskrit scholar V. Raghavan. She also obtained a master's degree in English Literature from Bihar University. Her knowledge of mathematics, Sanskrit, and literature gave her the unusual ability to examine mathematical ideas preserved in ancient Indian texts in their original intellectual and cultural context. Sarasvati Amma worked as an educator at several institutions, including Sree Kerala Varma College in Thrissur, Maharaja's College in Ernakulam, and Women's College in Ranchi. From 1973 to 1980, she served as principal of Shree Shree Lakshmi Narain Trust Mahila Mahavidyalaya in Dhanbad. Through teaching and administration, she contributed to the education of many students while continuing her scholarly interests. Her most important scholarly achievement was her book *Geometry in Ancient and Medieval India*, first published in 1979. The work examines mathematical literature from the Vedic period through the early seventeenth century. Sarasvati Amma studied the *Sulba Sutras*, Jain mathematical works, Hindu Siddhantas, and the contributions of mathematicians and astronomers such as Aryabhata, Bhaskara, Sripati, Madhava of Sangamagrama, Paramesvara, and Nilakantha. She also examined the *Bakhshali Manuscript* and the works of Mahavira, Sridhara, and Narayana Pandita.

One of the important arguments of her research was that Indian mathematics should not be viewed simply as a tradition dominated by algebraic calculation. She demonstrated that Indian scholars also developed sophisticated geometrical methods and demonstrations. Her research highlighted the connections between geometry, algebra, astronomy, measurement, and series mathematics in the Indian tradition.

Sarasvati Amma also played an important role in developing future scholarship. She was the doctoral adviser of historian of mathematics Radha Charan Gupta, whose doctoral research focused on trigonometry in ancient and medieval India. Her influence therefore extended beyond her own publications and helped encourage further historical research into Indian mathematics. T. A. Sarasvati Amma retired from academic life and later lived in Ottappalam, Kerala. She died on 15 August 2000, aged 81. In recognition of her contribution, the Kerala Mathematical Association began the Prof. T. A. Sarasvati Amma Memorial Lecture at its annual conference in 2002. Her book remains an important reference for scholars studying the history of Indian mathematics. T. A. Sarasvati Amma's legacy lies in her determination to recover and explain India's mathematical heritage. By bringing together mathematics, Sanskrit, history, and education, she opened a valuable window into the geometric ideas of earlier Indian scholars. Her work continues to inspire students and researchers and stands as a significant contribution by an Indian woman to the history of mathematics.

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EDITORIAL

The Mathematics

Good Food Habits: The Key to Better Learning



In today’s competitive educational environment, students are expected to perform well in mathematics, science, and other demanding subjects. While regular study and proper guidance are essential, one important factor is often overlooked: good food habits. A healthy and balanced diet plays a significant role in improving students’ concentration, memory, reasoning ability, and overall academic performance.

Mathematics and science require sustained attention, logical thinking, problem-solving skills, and mental alertness. Students who regularly consume nutritious meals are more likely to remain energetic and focused during lessons. Foods containing proteins, whole grains, fruits, vegetables, and healthy fats provide the brain with essential nutrients and a steady supply of energy. In contrast, excessive consumption of junk food, sugary drinks, and highly processed snacks may cause tiredness and poor concentration.

Breakfast is particularly important for students. Beginning the day with a nutritious breakfast can help maintain energy levels and improve classroom attention. Similarly, drinking enough water is necessary because even mild dehydration can affect concentration and mental performance. Students should also maintain regular meal times rather than skipping meals because of examinations, homework, or busy schedules.

Good eating habits may also support emotional well-being. A balanced diet can help students feel more energetic and stable, making it easier for them to manage academic pressure. This is especially valuable when studying difficult mathematical problems or understanding complex scientific concepts.

Schools and parents therefore have a shared responsibility to encourage healthy eating habits. School canteens should offer nutritious choices, while parents should educate children about the importance of balanced meals. Students themselves must learn to make sensible choices instead of depending on fast food for convenience.

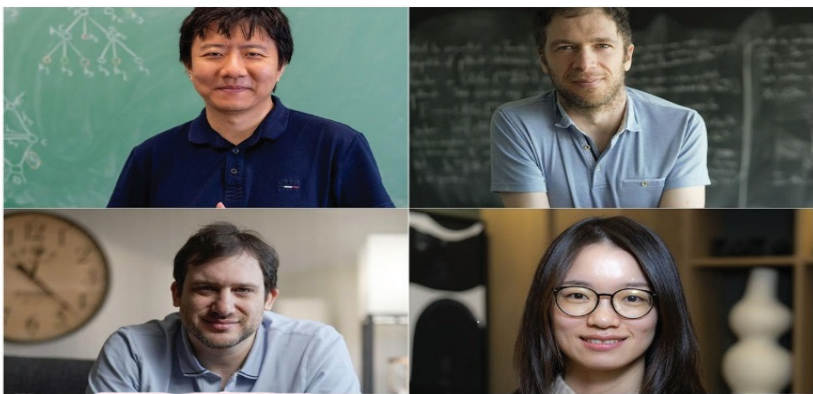
Education is not merely about books, classrooms, and examinations; it is also about developing healthy habits that support lifelong success. Good food cannot replace hard work, but it can provide the physical and mental foundation necessary for effective study. If students combine nutritious eating with adequate sleep, regular exercise, and disciplined study, they can improve both their health and their academic achievements.

A healthy body nourishes a healthy mind, and a healthy mind is better prepared to solve the problems of mathematics and understand the wonders of science.

RECENT NEWS

MAJOR (Graduation)

Four Mathematicians Receive the 2026 Fields Medals



(Clockwise from top-left) Yu Deng, John Pardon, Hong Wang, and Jacob Tsimerman, winners of the 2026 Fields Medals. | Photo Credit: Fields Medals 2026/International Mathematical Union

Philadelphia, July 23: Four outstanding mathematicians were honoured with the prestigious Fields Medals 2026 at the opening ceremony of the International Congress of Mathematicians (ICM) in Philadelphia, USA, on Thursday. The ICM is being held from July 23 to 30 at the Pennsylvania Convention Center.

The Fields Medal is one of the highest honours in the world of mathematics. It is awarded once every four years by the International Mathematical Union (IMU) during the International Congress of Mathematicians. The award recognises outstanding mathematical achievements as well as the promise of future achievements. It is generally awarded to two to four mathematicians who have not reached the age of 40 at the beginning of the year of the Congress.

The 2026 Fields Medal winners are Yu Deng, John Pardon, Jacob Tsimerman and Hong Wang. They were recognised for important contributions to different branches of mathematics.

Yu Deng, of the University of Chicago, was honoured for his work in partial differential equations and mathematical physics. His research includes the rigorous derivation of the Boltzmann equation from the motion of particles in rarefied gases. He has also worked on wave kinetic equations and nonlinear Schrödinger dynamics.

His research has helped mathematicians understand complex physical systems through mathematical methods. John Pardon, of Stony Brook University, received the medal for major achievements in symplectic geometry, as well as important contributions to geometry and topology. His work includes new approaches to virtual fundamental cycles, Fukaya categories and the counting of holomorphic curves. He has also contributed to the study of three-dimensional manifolds and knot theory.

Jacob Tsimerman, of the University of Toronto, was recognised for his contributions to arithmetic and complex algebraic geometry. He helped develop o-minimality as an important method in these areas and played a major role in proving several important mathematical conjectures, including Griffiths' conjecture and the André-Oort conjecture for Siegel modular varieties.

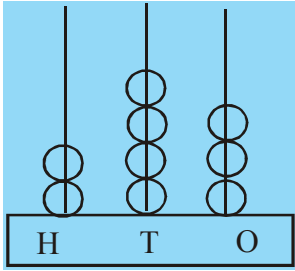
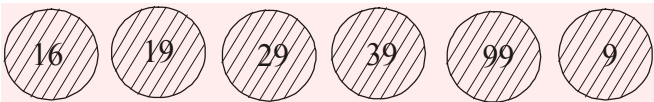
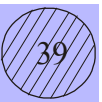
Hong Wang, of New York University and the Institut des Hautes Études Scientifiques in France, was honoured for her work in harmonic analysis and geometric measure theory. Her research has advanced the study of Fourier restriction, Falconer distance sets, Furstenberg sets and the Kakeya problem in three dimensions. Her achievements have opened new possibilities in the study of geometry and mathematical analysis.

The awards are also a source of inspiration for children and young students. The success of these mathematicians shows that curiosity, creativity, patience and hard work can lead to great achievements. Their stories may encourage students to enjoy mathematics, solve challenging problems and consider careers in mathematics and science. The 2026 Fields Medal ceremony was therefore not only a celebration of four brilliant mathematicians but also an encouragement to the next generation to explore the fascinating world of mathematics.



Catch me if you can

Classes (I - II)

- Which number is greater than 2732 by 1489 ?
(a) 4212 (b) 4221 (c) 4122 (d) 1243
- What number does the given abacus show ?

 (a) 243 (b) 234 (c) 432 (d) 324
- 20 5 = 18 - 3
What is the missing sign ?
(a) + (b) - (c) × (d) ÷
- Smallest four-digit no is -
(a) 0001 (b) 0100 (c) 1000 (d) 1999
- Write the greatest and smallest numbers of four digit can be formed with the digit 6, 0, 8, 2.
(a) 8026, 0268 (b) 8620, 2086
(c) 8620, 2068 (d) 8260, 2068
- Write the number in figures.
Eighteen thousand four hundred and ten.
(a) 8410 (b) 18410
(c) 18140 (d) none of these
- Which of the following is not correct ?
(a) $4 + 2 = 6$ (b) $4 \times 2 = 6$
(c) $2 \times 6 = 12$ (d) $6 + 2 = 8$
- I am a 2 digit number. I have a 9 in one's place, I am less than 30, I am more than 20.
Which ball am I ?

 (a)  (b)  (c)  (d) 
- $879 = 8 \text{ hundreds} + 7 \text{ tens} + \underline{\hspace{2cm}}$ ones. Fill in the blank.
(a) 8 (b) 7 (c) 9 (d) 6

- If we look at the pattern carefully it consists of 4 facial expressions

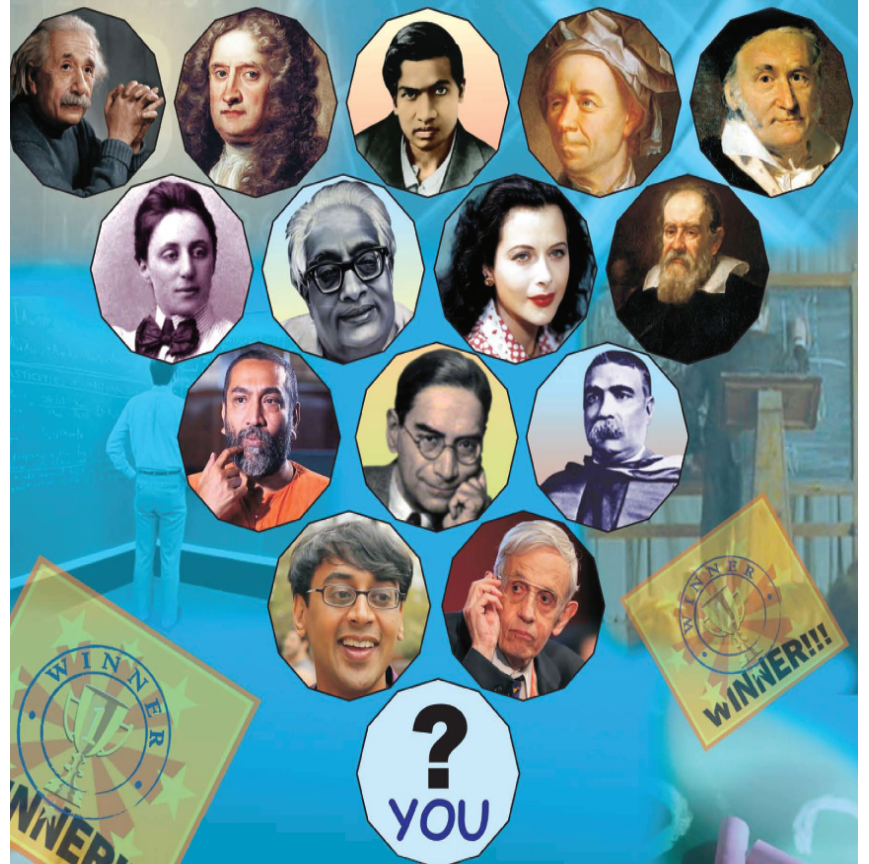


Following this pattern the next figure should be 

(a) 0 (b) 0 (c) 0 (d) 0

- In a row of trees one tree is third from either end of the row. How many trees are there in the row?
(a) 2 (b) 3 (c) 5 (d) 6
- John : A number is subtracted from 0 gives a negative number.
Alexander : A number is subtracted from 0 gives a positive number.
Who is correct ?
(a) John (b) Alexander
(c) Both are correct (d) Both are incorrect

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Classes (III-IV)

1. $236239 + 457982 + 25746 + 4623 = ?$
(a) 724590 (b) 724591 (c) 724583 (d) 724530
2. $741632 - 438095 = ?$
(a) 300037 (b) 330537 (c) 724583 (d) 724530
3. $2361 \times 15 = ?$
(a) 35515 (b) 35415 (c) 35410 (d) 35510
4. $171 \div 19 = ?$
(a) 19 (b) 109 (c) 9 (d) 90
5. $839 \times 603 = ?$
(a) 505917 (b) 55917 (c) 5500 (d) 55043
6. In a field, 416 Cabbage saplings are arranged in 13 row in a field. Then how many Cabbage saplings will be there in each row?
(a) 35 (b) 32 (c) 42 (d) 40
7. Rahul is studying with four friends in a study room. His mother gives him a basket containing 17 apples and asks him to divide it equally among themselves. So, how will be divide the apples among them? ?
(a) each will get 3 and 2 apple remains undistributed
(b) each will get 5 and 3 apple remains undistributed
(c) each will get 1 and 2 apple remains undistributed
(d) each will get 5 and 5 apple remains undistributed
8. 672 coconuts are taken off from 32 trees. If coconuts are picked from each tree in equal ammount, then how many coconuts are picked from each tree ?
(a) 10 (b) 12 (c) 20 (d) 21
9. Each student of class 10 are given geography book containing pages. If the total no. of pages is 1608, then how many students are there?
(a) None of these (b) 20
(c) 22 (d) 24
10. Seema had four dolls. Her friend Nisha gave her two more dolls. Now Seema gives 3 dolls to her younger sister Usha. So, now how many dolls Seema have ?
(a) 4 (b) 2
(c) 3 (d) None of these

11. The number of zeroes that comes after 1 for 10 million is _____.
(a) 7 (b) 8 (c) 6 (d) 9
12. 1 + greatest 7 digit number is _____.
(a) 999999999 (b) 9999999
(c) 10000000 (d) 100000
13. Which of the following correctly shows 185367249 accord-
ing to the International place value chart ?
(a) 1, 853, 672, 49 (b) 18, 536, 724, 9
(c) 185, 367, 249 (d) 18, 53, 67, 249
14. Which of the following correctly shows 24358999 according
to Indian place value chart?
(a) 24, 35, 899, 9 (b) 2,43, 58, 999
(c) 24, 35, 89, 99 (d) 243, 589, 99
15. Find Z in the given pattern. $Z \times 4520 = 234$
(a) 106 (b) 104 (c) 108 (d) 110
16. What number am I ?
I am a two – digit even number
I am a comon multiple of 6 and 8
I have a total of 9 factors.
(a) 24 (b) 96 (c) 42 (d) 48

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Catch me if you can

Classes (V-VI)

- A man was asked how old he was. He replied, "Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am." Well, how old was he ?
(a) 18 (b) 21 (c) 15 (d) 32
- At least which number must be subtracted from 9999999 so that it will become the multiple of 125 ?
(a) 124 (b) 24
(c) 4 (d) None of these
- If 42573k is divisible by 72 then the value of k is ____
(a) 4 (b) 5 (c) 7 (d) 6
- A number which when divided by 32 leaves a remainder of 29. If this number is divided by 8 the remainder will be
(a) 0 (b) 1 (c) 3 (d) 5
- The sum of all digits except the unity that can be substituted at the place of k in order to be divisible by 8 in the number 23487k2 :
(a) 5 (b) 14 (c) 19 (d) 16
- A student gets 4 marks for a correct answer and 1 mark is deducted for a wrong answer. If she has done 80 questions at all and she has gotten only 240 marks. the correct answers she has attempted is :
(a) 40 (b) 64 (c) 60 (d) 72
- Find the number of ways of expressing 180 as a product of 2 factors.
(a) 18 (b) 8 (c) 6 (d) 9
- Find the number of numbers lying between 1 and 1000 which are divisible by each of 6, 7 and 15.
(a) 5 (b) 7 (c) 8 (d) 4
- What number should be multiplied by 37 to get the same product when 296 and 309 are multiplied?
(a) 2472 (b) 2696
(c) 2572 (d) None of these.
- Find the sum of all the numbers formed with the digits 2, 3, 45.
(a) 93342 (b) 93324 (c) 93362 (d) 94342
- How many numbers between 11 and 111 are the multiples of both 2 and 5 ?
(a) 12 (b) 10 (c) 11 (d) 70

- If '+' stands for 'division', '-' stands for 'equal to', '×' stands for 'addition', '÷' stands for 'greater than', '=' stands for 'less than', '>' stands for 'multiplication' and '<' stands for 'subtraction', then the given choices which one is correct?
(a) $5 + 2 \times 1 = 3 + 4 > 1$ (b) $5 > 2 \times 1 = 3 > 4 < 1$
(c) $5 \times 2 < 1 - 3 < 4 \times 1$ (d) $5 < 2 \times 1 \quad 3 > 4 \times 1$
- If 10th day after 15th of the month be Thursday, what day was the 1st of the same month ?
(a) Saturday (b) Tuesday
(c) Monday (d) Sunday
- The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be
(a) 12 years (b) 14 years
(c) 18 years (d) 20 years
- Which is greater (x and y being positive) ?
(a) $(x^3 + y^3) : (x^2 + y^2)$ (b) $(x^2 + y^2) : (x + y)$
(c) Equal (d) Cannot be determined
- If $a : b :: c : d$, then $a / b = c / d = (a + c) / (b + d)$. This operation is known as
(a) Componendo (b) Dividendo
(c) Convertendo (d) Addendo

The Mathematics

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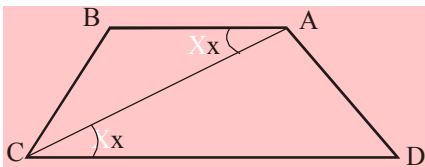
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Catch me if you can

Classes (VII-VIII)

- The number of positive integral factors of 1017 is
(a) 293 (b) 313 (c) 323 (d) 333
- A dog at point 'a' goes in pursuit of a fox 30m away. The dog makes 2m and the fox, 1m long leaps. If the dog makes two leaps to the fox's three, at what distance from 'a' will the dog catch up with the fox?
(a) 100 m (b) 110 m (c) 105 m (d) 120m
- If a five digit number 2785x is divisible by 11, then the value of x is
(a) 1 (b) 2 (c) 3 (d) 5
- ABC is triangle, and P is a point on line AB such that . If AC = 9cm, CP = 12cm and BC = 15cm then AP is equal to
(a) 11.2 cm (b) 10.2 cm (c) 8.0 cm (d) 7.2 cm
- ABCD is a trapezium in which BA is parallel to CD, AB = 10 cm, BC = 9 cm and AC = 15cm. The length of AD is



- (a) 6 cm (b) 13.5 cm (c) 12 cm (d) cm
- The base of a triangle is of length 'b', and altitude is of length 'h'. A rectangle of height 'x' is inscribed in the triangle with the base of the rectangle in the base of triangle. The area of rectangle is
(a) $\frac{bx}{h}(h-x)$ (b) $\frac{hx}{b}(b-x)$ (c) $(b-x)$ (d) $16\frac{2}{3}$
- A monkey climbing a greased pole, ascends 5m and slips down 2m in alternate minutes. If the pole is 35m high, then the monkey will reach the top in
(a) 11 min (b) 11 min 24 sec
(c) 11 min 36 sec (d) None of the above
- A valid reason for concluding that 635 is not a square is that
(a) it is an odd integer (b) it ends with 5
(c) it ends with 35 (d) its digits add upto 14
- If the digit in the nits place of a squar natural number is 6, then the digit in the tens place will be
(a) 1 (b) 3 (c) even (d) odd

- The greatest common divisor of 8787878787 and 7878787878 equals
(a) 3 (b) 9
(c) 10101010101 (d) 30303030303

- The number 2.5252525 ... can be written as a fraction. When reduced to lowest terms the sum of the numerator and denominator of this fraction is
(a) 7 (b) 29 (c) 141 (d) 349

- Read the following six statements :

- All women are good drivers
- Some women are good drivers
- No men are good drivers
- All men are bad drivers
- At least one man is a bad driver
- All men are good drivers

The statement that negates statement (vi) is :

- (i) (b) (ii) (c) (iii) (d) (v)

- The expression when simplified equals

- $1/(x+4)$ (b) $1/(x-4)$
(c) $-1/(x+4)$ (d) $1/(x-5)$

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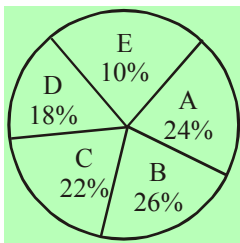


Catch me if you can

Classes (IX-X)

1. It the organization retrenches 2400 managers, what would be the approximate percentage of A type managers ?
- (a) 26 (b) 22
- (c) 32 (d) Cannot be determined
2. Next year, half of the total managers of B category, 25% of managers from the A category will be promoted to higher positions inside the company. If there are no new recruitments in the company and no manager goes out of the organization, what is the total number of above five types of managers in the company ?
- (a) 12886 (b) 13284 (c) 14332 (d) 13792
3. Direction (Questions 3 to 7) : Go through the data given below and solve the questions based on it.

The following figure represents percentage figure of the five types of managers in a company. Total number of managers = 16400.



4. What is the difference between the number of type of C and D managers in the organization?
- (a) 656 (b) 820 (c) 984 (d) 1312
5. Organization apoints another 600 type C managers without changing any other type of managers. What would be the approximate percentage of B now ?
- (a) 24 (b) 56 (c) 21 (d) 25
6. An error of 0.02cm is made in the measurement of a line 10cm long ? While an error of only 0.2cm is made in a measurement of a line 100 cm long. In comparison with the relative error of the first measurment, the relative error of the second measurement is :
- (a) greater by 0.18 (b) the same
- (c) 10 times as great (d) None of these
7. A equilateral triangle is drawn with a side of length 'a'. A new equilateral triangle is formed by joining the midpoints of the sides of the first one. Then a third equilateral triangle is formed by joining the midpoints of the sides of the second; and so on forever. The limit of the sum of the perimeters of all the triangles thus drawn is
- (a) infinite (b) $5\frac{1}{4}a$ (c) 2a (d) 6a

8. Successive discounts of 10% and 20% are equivalent to a single discount of :
- (a) 30% (b) 25% (c) 15% (d) 28%
9. Mr. A owns a home worth Rs. 10,000. He sells it to Mr. B at a 10% profit based on the worth of the house. Mr. B sells the house back to Mr. A at a 10% loss. Then :
- (a) A makers Rs. 1100 on the deal
- (b) A makes Rs. 1000 on the deal
- (c) A loses Rs. 900 on the deal
- (d) A loses Rs. 1000 on the deal.
10. Indicate in which one of the following equations 'y' is neither directly nor inversely proportional to x :
- (a) $x + y = 0$ (b) $3xy = 10$
- (c) $x = 5y$ (d) $3x + y = 10$
11. Given : $x > 0, y > 0, x > y$ and $z \neq 0$. The inequality which is not always correct is:
- (a) $x + z > y + z$ (b) $x - z > y - z$
- (c) $xz > yz$ (d) $\frac{x}{z^2} > \frac{y}{z^2}$
12. The roots of the equation $x^2 - 2x = 0$ can be obtained graphically by finding the abscissas of the points of intersection of each of the following pairs of equations except the pair.
- (a) $y = x^2, y = 2x$ (b) $y = x^2 - 2x, y = 0$
- (c) $y = x, y = x - 2$ (d) $y = x^2 - 2x + 1, y = 1$

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Classes (XI-XII)

- OPQR is a square and M, N are the middle points of the sides PQ and QR respectively then the ratio of the areas of the square and the triangle OMN is
(a) 4 : 1 (b) 2 : 1 (c) 8 : 3 (d) 4 : 3
- If $\cos(\theta - \alpha) = a$ and $\sin(\theta - \beta) = b$, then $(0 < \theta - \alpha, \theta - \beta < \pi/2)$ $\sin(\alpha - \beta)$ is equal to
(a) $4a^2b^2$ (b) $a^2 - b^2$ (c) $a^2 + b^2$ (d) $-a^2b^2$
- Let $ax^2 + \frac{b}{x} \geq c$ for all positive x, where $a > 0$ and $b > 0$. The value of the expression $27ab^2$ cannot be less than $\cos^2(\alpha - \beta) + 2ab$
(a) $4c^3$ (b) $4c^2$ (c) $8c^3$ (d) c^3
- Shaded region is given by
(a) $|z+2| \geq 6, 0 \leq \arg(z) \leq \frac{\pi}{6}$ (b) $|z+2| \geq 6, 0 \leq \arg(z) \leq \frac{\pi}{3}$
(c) $|z+2| \geq 6, 0 \leq \arg(z) \leq \frac{\pi}{2}$ (d) none of these
- Given the points A(0, 4) and B(0, -4), the equation of the locus of the point P(x, y) such that $|AP - BP| = 6$ is
(a) $x^2/7 - y^2/9 = 1$ (b) $y^2/9 - x^2/7 = 1$
(c) $x^2/9 - y^2/7 = 1$ (d) $y^2/7 - x^2/9 = 1$
- The general solution of the equation $\frac{1 - \sin x + \dots + (-1)^n \sin^n x + \dots}{1 + \sin x + \dots + \sin^n x + \dots} = \frac{1 - \cos 2x}{1 + \cos 2x} \quad (n \in \mathbb{I})$
(a) $(-1)^{n-1} \left(\frac{\pi}{3}\right) + n\pi$ (b) $(-1)^{n+1} \left(\frac{\pi}{3}\right) + n\pi$
(c) $(-1)^n \left(\frac{\pi}{6}\right) + n\pi$ (d) none of these
- If $f_r(x), g_r(x), h_r(x), r = 1, 2, 3$ are polynomials in x such that $f_r(\alpha) = g_r(\alpha) = h_r(\alpha), r = 1, 2, 3$ and
$$f(\alpha) = \begin{vmatrix} f_1(x) & f_2(x) & f_3(x) \\ g_1(x) & g_2(x) & g_3(x) \\ h_1(x) & h_2(x) & h_3(x) \end{vmatrix}, \text{ then } f'(\alpha)$$

(a) > 0 (b) < 0
(c) $= 0$ (d) none of these
- A and B toss a fair coin each simultaneously 50 times. The probability that both of them will not get tail the same toss is
(a) $(3/4)^{50}$ (b) $(2/7)^{50}$
(c) $(1/8)^{50}$ (d) none of these
- If p is a prime where $p \geq 11$ and $n = 1/p! + 1$, then the number of primes in the list $n + 1, n + 2, \dots, n + p - 1$ is
(a) 1 (b) 4
(c) $p + 1$ (d) none of these

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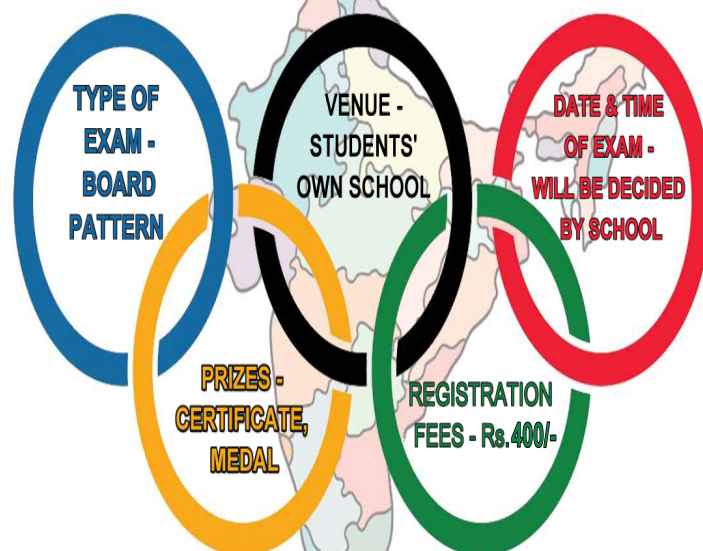
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