

Revision VIII

February 9, 2026

- In a donation drive, 605 toys were distributed equally among children in such a way that the number of toys received by each child is 20% of total number of children. How many toys did each child get?

- Triangle ABC is an equilateral with side length 9 cm. If O is the center of the inscribed circle of triangle ABC, then what is the area (in sq. cm) of the circle passing through A, O, and C?

- In a math test, 67 students are wearing red T-shirts, and another 85 students are wearing green T-shirts. The 152 students are assigned into 76 pairs. In exactly 27 of these pairs, both students are wearing red T-shirts. In how many pairs are both students wearing green T-shirts?

- Find the average of all the three-digit numbers whose units digit is half the hundreds digit.

- P, Q, and R are three workers who can complete a task in 6, 10, and 15 hours respectively. All the three are assigned simultaneously to the task but P works at half his normal efficiency for the first 2 hours and Q works at $\frac{1}{4}$ th his normal efficiency for the first 4 hours. In how many hours will the task be completed?

- In rhombus ABCD, point P lies on AB such that DP is perpendicular to AB, $AP = 9$ cm and $PB = 6$ cm. What is the area (in sq. cm) of rhombus ABCD?

- A cement trader bought cement for Rs. 15 lakhs from a cement factory. Each day, he transports 12 lorry loads of cement from the factory to his godown at Rs. 2,500 per lorry load. From the 11th day onwards, the factory charged him Rs.2,000 per day for using their godown. It took the trader 20 days to transport all the cement to his site. If the trader sold the cement to a retailer for Rs.26.5 lakhs, then what was his profit percentage?

- For natural numbers

$$n \geq 2, f(1) + 2f(2) + 3f(3) + \dots + nf(n) = n(n+1)f(n) \text{ and } f(1) = 1. \text{ Then find the value of } \frac{f(1024)}{f(2048)}.$$

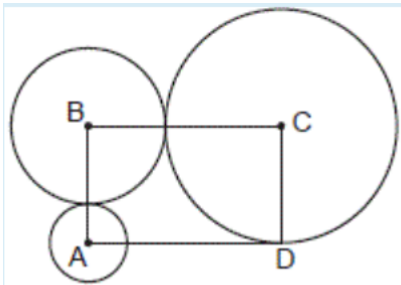
- A triangle is formed by the line $7y + 24x = 168$ and the coordinate axes. What is the radius (in units) of the circumcircle of the triangle?

- A person borrows some money from the bank at 10% per annum compounded annually for two years. At the end of each year he pays Rs.72,600. Find the amount (in Rs.) borrowed by him, if the bank charges interest on the balance amount to be repaid.

- A 12-liter solution of hydrochloric acid had 40% acid. It was mixed with a 8 -liter solution of hydrochloric acid which had $a\%$ acid, where $30 \leq a \leq 50$. The acid concentration in the resulting mixture is $b\%$. Which of the following is not a possible value of b ?

- The electricity bill of Swati's apartment is partly fixed and partly varies as the number of units of electricity consumed. In March, when 540 units were consumed, the bill was Rs. 1,800. In April, 620 units were consumed and the bill was Rs. 2,040. In May, if 500 units are consumed, what will be the total amount of the bill (in Rs.)?

- In the figure given below, ABCD is a rectangle such that $CD = 6$ cm and $AD = 10$ cm. What is the area (in sq. cm) of the region inside the rectangle but outside all three circles? (Given $\pi = \frac{22}{7}$)



- The old men constituted $\frac{5}{12}$ of the crowd at a rally. After a bus carrying 50 more people arrived, the old men reduced to $\frac{9}{25}$ of the total rally attendees. What is the minimum number of old men who could have been at the rally after the bus arrived?

- If $a + b = 4$ and $4^a + 4^b = 40$, then the value of $2^{4a-3} + 2^{4b-3}$ is equal to

- Arjun buys apples and oranges in the ratio of 5 : 3. For every 24 fruits of the combined lot of apples and oranges bought by him, he buys 2 chocolate boxes. If the total number of all three types of articles bought by him is 156, what is the number of oranges bought by him?

- Pipes P, Q, and R are fitted to a cylindrical tank. Each of Q and R can fill the tank in 6 hours. P, which is a draining pipe, works at a rate that is half of that of the filling rate of Q. P is fitted at a point which is at half the height of the tank from the base. If all the pipes are opened simultaneously, what will be the time (in hours) taken to fill the empty tank?

- A trader mixed two varieties of rice, one costing Rs.96 per kg and the other Rs.112 per kg. He sells 750 g packs of this mixed variety at Rs.105 and gets 40% profit. What is the percentage of dearer rice in the mixed variety?

- Let $N = 2a3$ be a three-digit number. When N is added to $32c$ it gives a three-digit number $M = 5b9$. If M is divisible by 9, then $a + b - c$ equals

- In a school library, there are only fiction and non-fiction books. The number of fiction books is 50% more than the number of non-fiction books. If 60% of the fiction books and 40% of the non-fiction books are borrowed, there are 624 books left in the library. Determine the total number of fiction and non-fiction books originally present.

- Three employees, Amit, Boman, and Gaurav, collaborate on a project. They complete the project in 6 hours less time than what Amit takes to finish it working alone, in 1 hour less than the time taken by Boman working alone, and in half the time it takes Gaurav when he works alone. Find the time (in hours) it will take for Amit and Boman to complete the same project together.

