

# Revision V

December 11, 2025

- Surekha went to the vegetable market with enough money to purchase either 6 kg tomatoes or 5 kg potatoes. At the market she decided to spend only 80% of the money and purchased 3 kg potatoes and some tomatoes. What is the weight of tomatoes purchased by Surekha?

- Let  $A$  be a triangle formed by a straight line  $5x + 12y - 60 = 0$  and the co-ordinate axes. Then, find the area (in sq. units) of the circumcircle of triangle  $A$ .

- If a milkman adds 8 liters of water to a mixture of milk and water, then the ratio of milk to water in the new mixture becomes 2 : 3. Again, if he adds 7 liters of pure milk to the new mixture then the ratio of milk to water becomes 5 : 4. What was the ratio of milk to water in the original mixture?

- Two trains X and Y have lengths of 350 m and 250 m. When they run in the same direction, the faster train takes 150 seconds to cross the slower train. When they run in opposite directions, they take 25 seconds to cross each other. Find the ratio of the speeds of the trains X and Y respectively.

- A circle of diameter QR is drawn on a triangle PQR, which intersects PQ and PR at points S and T respectively. If  $PQ = 24$  cm and  $PR = 18$  cm, then the ratio of QT : RS is

- Three friends A, B and C work together to complete a piece of work. The time it takes for them to do the work together is 7 hours less than what A would have taken working alone, 10 hours less than what C would have taken working alone and one-fourth the time B would have taken working alone. How long (in hours) does it take for them to complete the work working together?

- A group of students prepared 3000 soft toys as a group activity at a cost of Rs. 2,400. They gave away 500 soft toys to a charity free of cost. They allowed a discount of 20% on the marked price and gave one free soft toy for every soft toy bought at a time. They were able to sell all the soft toys. If marked price of a soft toy is Rs. 3.50, then what is their overall gain/loss percentage in the whole transaction?



- How many even numbers with different digits less than 100000 can be formed using the digits 1, 2, 3, 4, 5, 6, 7 and 8?

- A tank has a leak at its bottom which empties it at 8 liters/minute. It also has a filling tap which can fill the tank in 8 hours. If the tank takes 20 hours to become full, then find the capacity of the tank (in liters).

- If the diagonals of a rhombus of side 20 cm are in the ratio 4 : 3, then what is the area (in sq.cm) of the rhombus?

- In a race of three athletes, A beats B by 12 meters and C by 81 meters. If B beats C by 70 meters, what was the length of the race (in meters)?

- Fred bought a 2000 ml bottle of Coke and drank 5% of it on the first day and replaced it with water. On the second day he drank 10% of the contents and replaced it with water. On the third day he drank 15% and replaced it with water. He continued in this way and drank the whole bottle on the 20th day. Find the average quantity of water (in ml) that Fred drank in these 20 days from the bottle.

- There are two pipes - A and B - having circular cross sections that are used to fill a tank. The radius of A is twice that of B. If B fills the tank in 60 minutes, then find the time (in minutes) taken by both the pipes together to fill the tank. (Assume speed of water in both pipes is the same.)

- Anika and Rashi initiated a business together by investing Rs. 20,000 each. However, after 3 months, Anika decided to withdraw Rs. 5,000 from her investment, while Rashi contributed an additional Rs. 5,000. If they accumulated a profit of Rs. 12,800 by the end of the year, what is the difference in profit shares (in Rs.) between Rashi and Anika?

- A school van driver takes 8 children per trip and makes a profit of 10% when the price of petrol is Rs.100 per liter. Find his profit percentage if he takes 10 children in the van and the price of petrol reduces to Rs.88.



- At a textile factory, a new embroidering machine is installed. The cost of the machine depreciates by Rs.1.44 lakh in the second year and by Rs.1.296 lakh in the third year. If the rate of depreciation was constant, what was the initial cost (in Rs. lakh) of the machine?

- Let  $ABCDEF$  be a regular hexagon with side length of 4 cm. Let  $P$  be the midpoint of  $AB$ , and  $Q$  be the midpoint of  $DE$ . What is the perimeter (in cm) of the quadrilateral  $PCQF$ ?

- A ship is 280 km away from the shore and it springs a leak at the bottom through which 150 liters of water enters the ship every 10 minutes. The ship has a pump that can throw out 400 liters of water per hour. The ship will sink if the water inside is more than 10,000 liters. What should be the minimum speed (in km/h) of the ship so that it reaches the shore before it sinks?

- Amol and Bhola can complete a piece of work in 24 and 36 days, respectively. Amol worked for the first 10 days and then left, and then Bhola continued for the next 12 days and left. The remaining work is completed by Chintu. If Chintu received Rs.9,000 for the work done by him, then what was the amount (in Rs.) received by Amol?

- A train travels 60% faster than a car. Both start from point P at the same time and reach point Q, which is 80 km away, at the same time. However, on the way, the train lost about 15 minutes due to stops at the stations. What is the speed (in km/h) of the car?

- Amisha has four times as much money as Mayur does. Every month, Amisha spends a constant amount of money, while Mayur earns one-fourth the amount of money that Amisha spends. After 10 months, the ratio of the amounts held by Amisha and Mayur is 12 : 5. How many months from the start will the ratio of the amounts held by Amisha and Mayur become 4 : 7?