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Aptitude Assignment 4

1.A leak in the bottom of a tank can empty the full tank in 6 hours. An inlet pipe fills water at the rate of 4 litres per minute. When the tank is full, the inlet is opened, and due to the leak, the tank is empty in 8 hours. Find the capacity of the tank.

Solution:

Part emptied by the leak in 1 hr=1/6
Net part emptied by the leak and the inlet pipe in 1 hr=1/8
Part fill by the inlet pipe in 1 hr=1/6−1/8=1/24
inlet pipe fills the tank in 24 hr=24×60=1440min.

According to the question inlet pipe fills water at the rate of 4 litters per minute. Hence, water fills in 1440 min=1440×4=5760L

Answer: the capacity of the tank is 5760Liters.

2. Of the 1000 inhabitants in a town, 60% are males, 20% are literate. If 25% of all the inhabitants 25%, are literate, then what percentage of females are literate?

Solution:

Given that total inhabitants =1000
% of men =60%
% of men who are literate =20%
% of inhabitants who are literate =25%
Total number of men =60% of 1000=10060×1000=600
Number of men who are literate =20% of 600=10020×600=120
Number of inhabitants who are literate 25% of 1000=10025×1000=250
Number of women =1000−600=400
Number of women who are literate= 250−120=130
% of literate women=400130×100=32.5%

Answer: The answer is 32.5%.

3. In an examination 80% candidates passed in English and 85% candidates passed in Mathematics. If 73% of candidates passed in both these subjects, what percent of candidates failed in both the subjects?

Solution:

Students passed in English = 80%
Students passed in Math's = 85%
Students passed in both subjects = 73%
Then, number of students passed in at least one subject
= (80+85)-73 = 92%. [The percentage of students passed in English and Maths individually, have already included the percentage of students passed in both subjects. So, we are subtracting percentage of students who have passed in both subjects to find out percentage of students at least passed in one subject.]

Thus, students failed in both subjects = 100-92 = 8%

Answer:8%

4. The monthly income of a person is 13,500, and his monthly expenditure is 9,000. Next year's income increased by 14%, and his expenditure increased by 7%. Find percent increase in his savings is?

Solution:

First, let's calculate the person's savings before the increase in income and expenditure. Savings = Income - Expenditure
Savings = Rs. 13500 - Rs. 9000
Savings = Rs. 4500

Next, let's calculate the person's income after the increase.
New income = Rs. 13500 + (14/100) * Rs. 13500
New income = Rs. 13500 + Rs. 1890
New income = Rs. 15390

Next, let's calculate the person's expenditure after the increase.
New expenditure = Rs. 9000 + (7/100) * Rs. 9000
New expenditure = Rs. 9000 + Rs. 630
New expenditure = Rs. 9630

Now, let's calculate the person's savings after the increase.
New savings = New income - New expenditure
New savings = Rs. 15390 - Rs. 9630
New savings = Rs. 5760

Finally, let's calculate the percentage increase in savings.
Percentage increase in savings = (New savings - Old savings) / Old savings * 100
Percentage increase in savings = (5760 - 4500) / 4500 * 100
Percentage increase in savings = 1260 / 4500 * 100
Percentage increase in savings = 28%
Therefore, the percentage increase in the person's savings is 28%.

Answer: the percentage increase in savings is 28%.

5. 49 pumps can empty a tank in 10 days, working 10 hours a day. if 70 pumps are used for 7 hours each day then in how many days the tank can be emptied?

Answer: the tank can be emptied in 9.31 days using 70 pumps