WEEK 6 - Long Answer Question

Problem 1: Salary of the New Manager

1. Calculate the Total Salary of Workers and Managers Before Replacement:

The average salary of 12 workers and 3 managers is Rs. 600.

Total number of people = 12 + 3 = 15.

Total salary = Average salary × Total number of people = 600 × 15 = Rs. 9000.

2. Calculate the Total Salary After Replacing the Manager:

One manager with a salary of Rs. 720 is replaced.

New total salary after removing the old manager's salary:

New total salary=9000−720=Rs.8280.New total salary=9000−720=Rs.8280.

3. Calculate the New Average Salary:

After replacing the manager, the new average salary is Rs. 580 for 15 people.

New total salary according to the new average:

New total salary=580×15=Rs.8700.New total salary=580×15=Rs.8700.

4. Calculate the Salary of the New Manager:

Let xx be the salary of the new manager.

The equation based on total salaries becomes:

8280+x=8700.8280+x=8700.

Solving for xx:

x=8700−8280=Rs.420.x=8700−8280=Rs.420.

Problem 2: Total Money Spent by All Persons

1. Calculate the Total Expenditure of the First Eight Persons:

Each of the first eight persons spent Rs. 30.

Total expenditure by them:

Total for first eight=8×30=Rs.240.Total for first eight=8×30=Rs.240.

2. Calculate the Average Expenditure of All Nine Persons:

Let AA be the average expenditure of all nine persons.

The ninth person spent Rs. 20 more than this average:

Ninth person s expenditure=A+20.Ninth person s expenditure=A+20.

3. Set Up an Equation for Total Expenditure:

The total expenditure by all nine persons is:

Total=240+(A+20)=A×9.Total=240+(A+20)=A×9.

This simplifies to:

A+20+240=A×9,A+20+240=A×9,

or

A+260=A×9.A+260=A×9.

4. Solve for AA:

Rearranging gives:

A×9−A=260,A×9−A=260,

or

A(9−1)=260,A(9−1)=260,

thus

A×8=260,A×8=260,

leading to

A=2608=Rs.32.5.A=8260=Rs.32.5.

5. Calculate the Ninth Person's Expenditure:

The ninth person spent:

A+20=32.5+20=Rs.52.5.A+20=32.5+20=Rs.52.5.

6. Calculate Total Money Spent by All Nine Persons:

Total expenditure by all nine persons:

Total=Rs.240+Rs.52.5=Rs.292.5.Total=Rs.240+Rs.52.5=Rs.292.5.

Therefore, the total money spent by all nine persons is approximately Rs.290 when rounded to the nearest whole number.