

Unitary Method (Including Time and Work)

Chapter 7: Unitary Method (Including Time and Work) · Topic 1

Key Concept

For time and work problems, we find how much work one person or machine does in one unit of time, then scale up or down as needed.

For example, if 4 workers complete a job in 6 days, we find the total 'work units' ($4 \times 6 = 24$), then use this to solve related problems.

If we know one worker's daily output, we can calculate how many workers or days are needed for a different job size.

The unitary method's flexibility makes it valuable for solving cost, speed, and time-and-work problems in a consistent, logical way.

Quick Revision Notes

- Unitary method finds one unit's value first.
- For time and work, find work per person per day.
- 4 workers $\times$ 6 days = 24 work units.
- We use work units to solve related problems.
- Knowing one worker's output helps calculations.
- This finds needed workers or days.
- The method applies to cost and speed too.
- It provides a consistent problem-solving approach.

Practice Questions

- 1 If 3 workers complete a job in 8 days, find the time for 6 workers.
- 2 Solve: If 5 machines produce 100 items in a day, how many items does 1 machine produce?
- 3 Discuss the unitary method's use in time and work problems.
- 4 Create your own time and work problem.
- 5 Solve: If 8 workers finish a task in 5 days, how long would 4 workers take?
- 6 Explain why the unitary method is versatile.