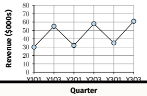
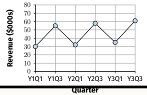
Push Tasks

Uncover a trend that strong seasonality is masking, by comparing same-quarter values across cycles.

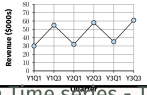
1. Compare the Q1 values alone, then the Q3 values alone. What underlying trend do you find?



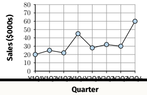
2. Calculate the percentage increase in Q1 revenue from Year 1 to Year 3.



3. Calculate the percentage increase in Q3 revenue from Year 1 to Year 3.



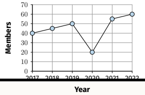
4. A student says this graph has no trend since values zig-zag. Explain why, using the figures.



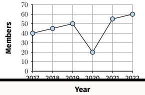
Push Tasks

Distinguish noise from a genuine change in trend, and write a full quantified TSN description.

5. Membership dips sharply in 2020. Is this noise, or a new trend? Justify using 2021 and 2022.



6. Ignoring the 2020 dip as noise, predict the 2023 membership value from the underlying trend.



7. Explain why telling noise apart from a genuine trend change matters for a decision-maker, e.g. before investing in expansion.

8. State this graph's trend (%), its seasonal cycle (peak/trough), and whether noise is present.