DATA101 Comprehensive Long Quiz - Set E (Answer Key)

50-Point Assessment Document (Answer Key)

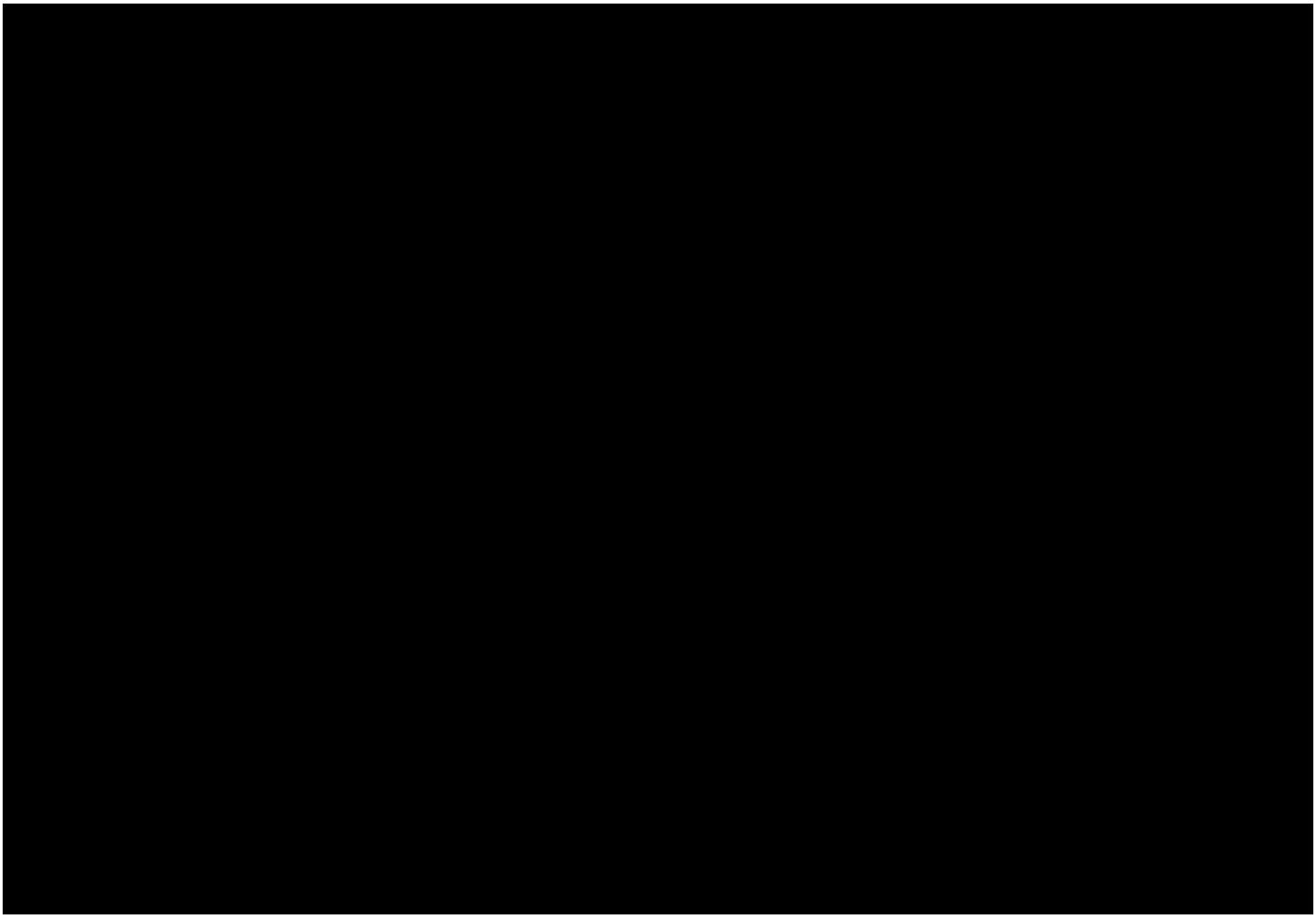
DATA 101: Data Visualization

DE LA SALLE UNIVERSITY

Long Quiz (50 points)

Name: _____ ID: _____ Date: _____

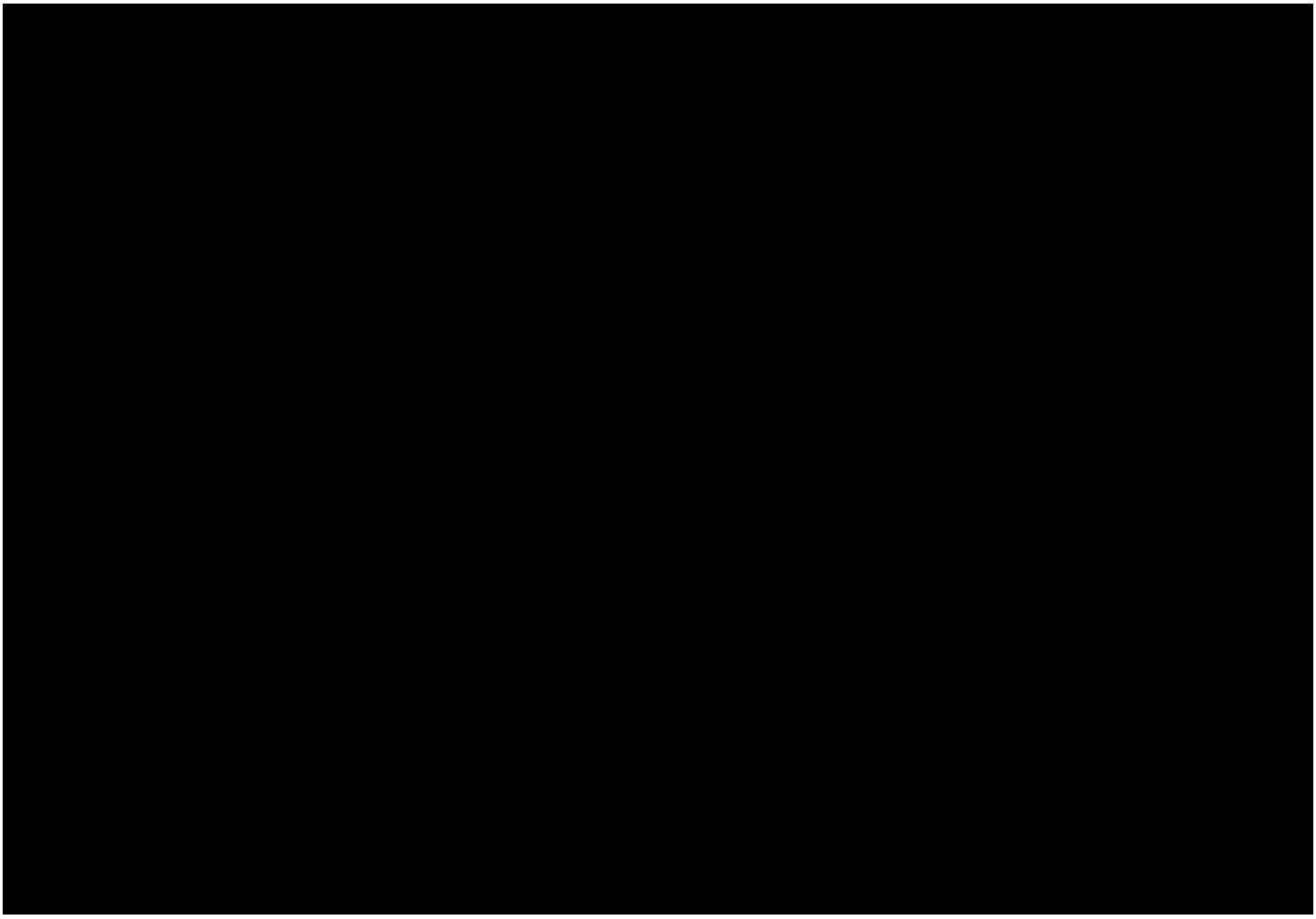
Instructions: Complete all questions. Use only one answer per matching item. Keep responses legible.



1) RANKING (1 PT)

Order interaction priorities for a live graph brief from highest to lowest: 1) Community t
slider, 3) Link strength legend, 4) Animated force transition.

Answer: 1) Degree filter slider, 2) Community toggle, 3) Link strength legend, 4) Animat

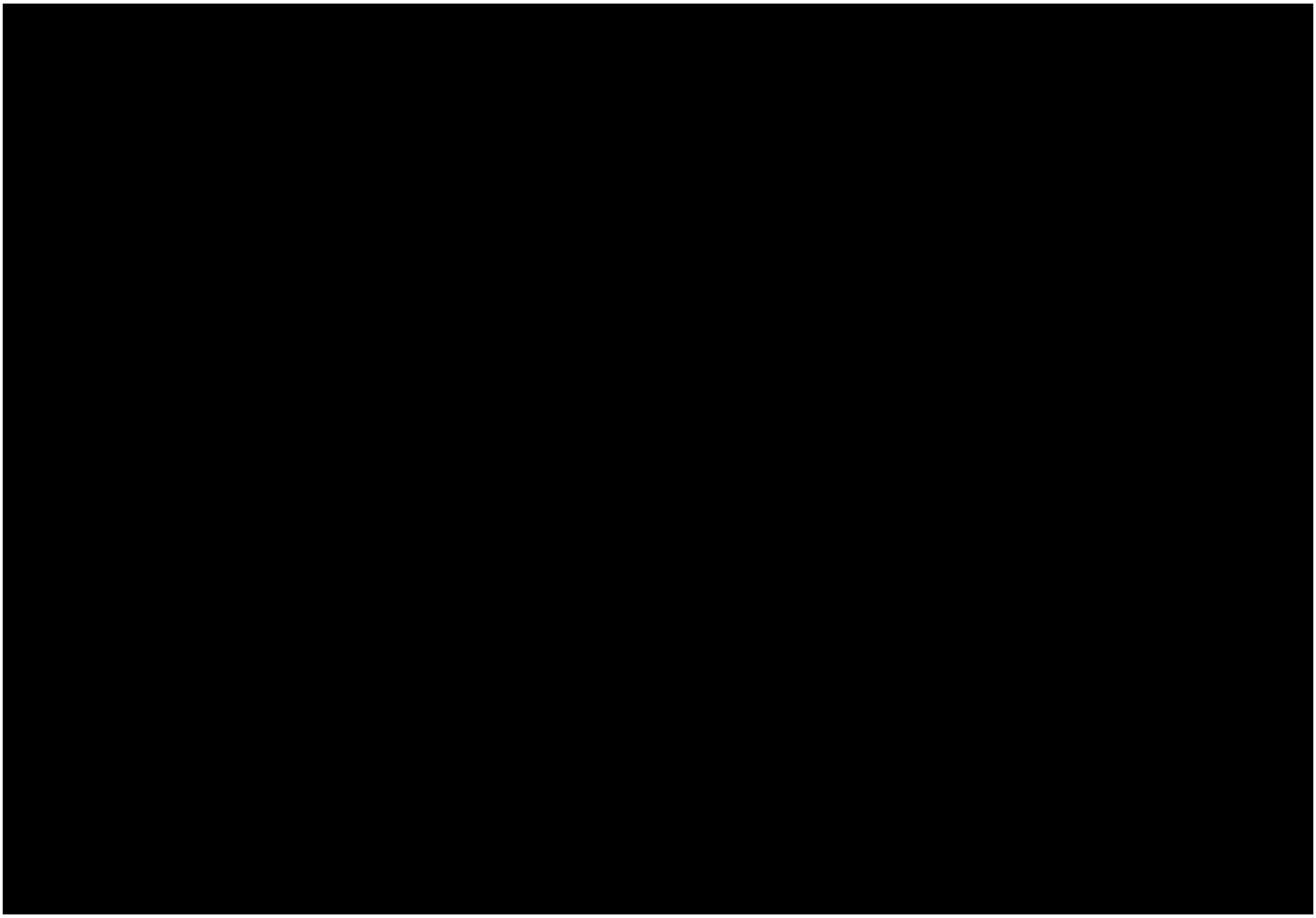


2) MCQ (1 PT)

You compare incidence in uneven counties with many low-population areas. Best base

- A) Raw counts in choropleth classes.
- B) Per-capita rates with explicit normalization and binning rationale.
- C) Bubble map only.
- D) Equal-area projection with no distance claims.

Answer: B.

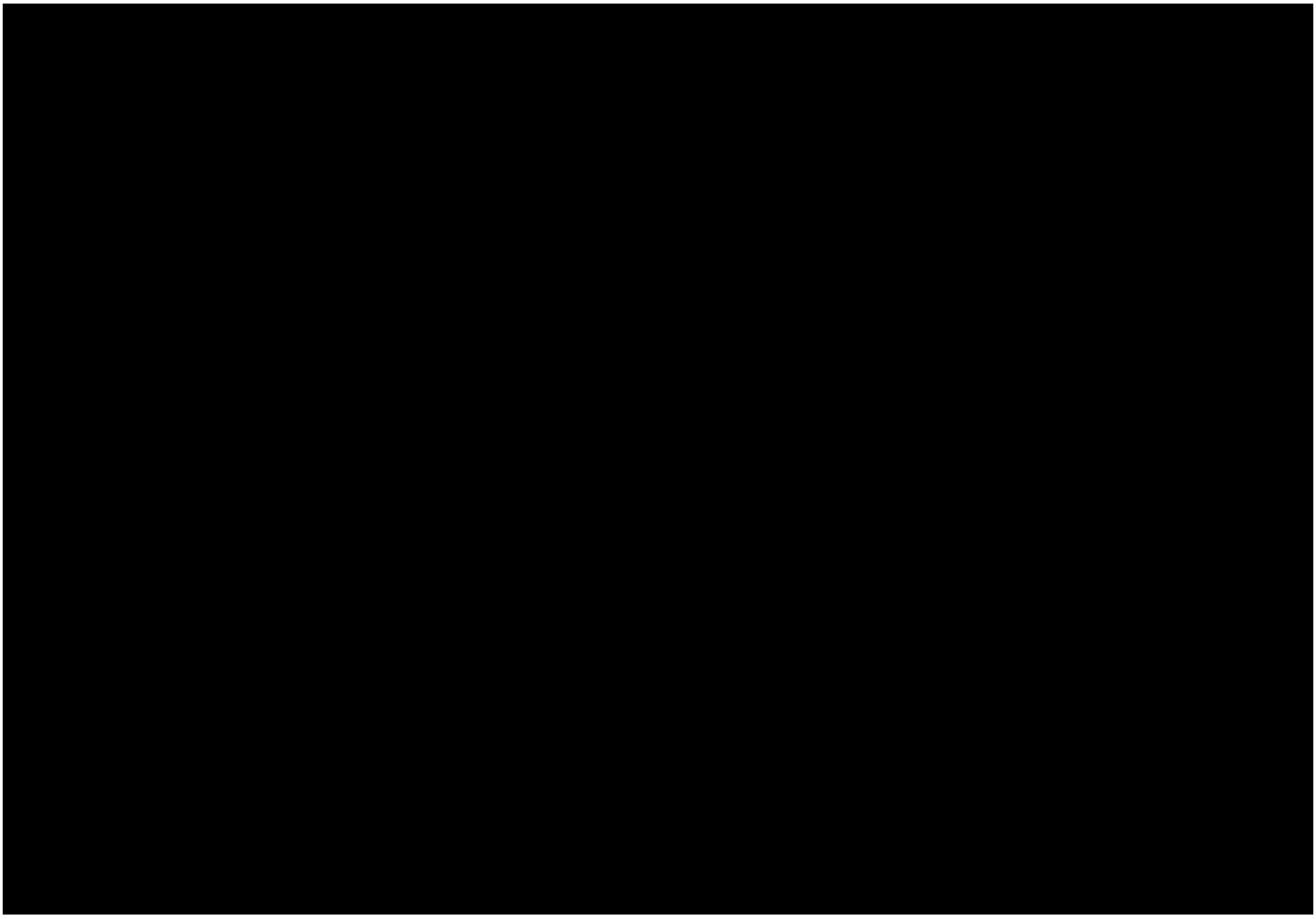


3) MULTIPLE ANSWERS (2 PTS)

Which are high-risk pitfalls in spatial interpretation?

- A) MAUP from boundary changes.
- B) Ecological inference.
- C) Ignoring symbol overlap scaling in overlays.
- D) Using CVD-safe colors only.
- E) Ignoring projection distortion when discussing distance.

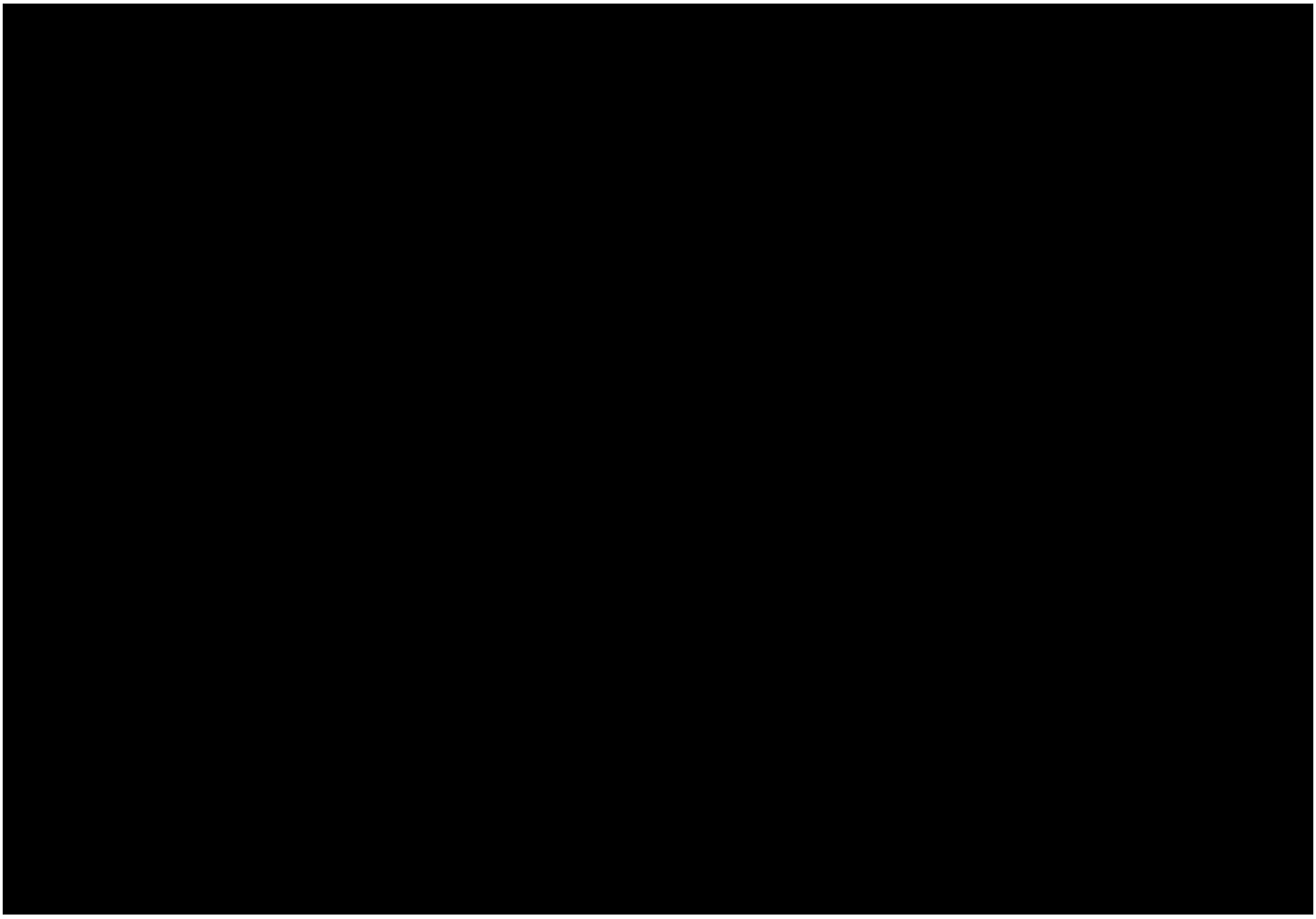
Answer: A, B, C, E.



4) SHORT ANSWER (2 PTS)

You publish a choropleth plus symbol map on the same indicator. State one essential p

Answer: Verify denominators/time frame and scale semantics are aligned so color class
magnitudes map the same underlying quantity and do not imply contradictory ordering

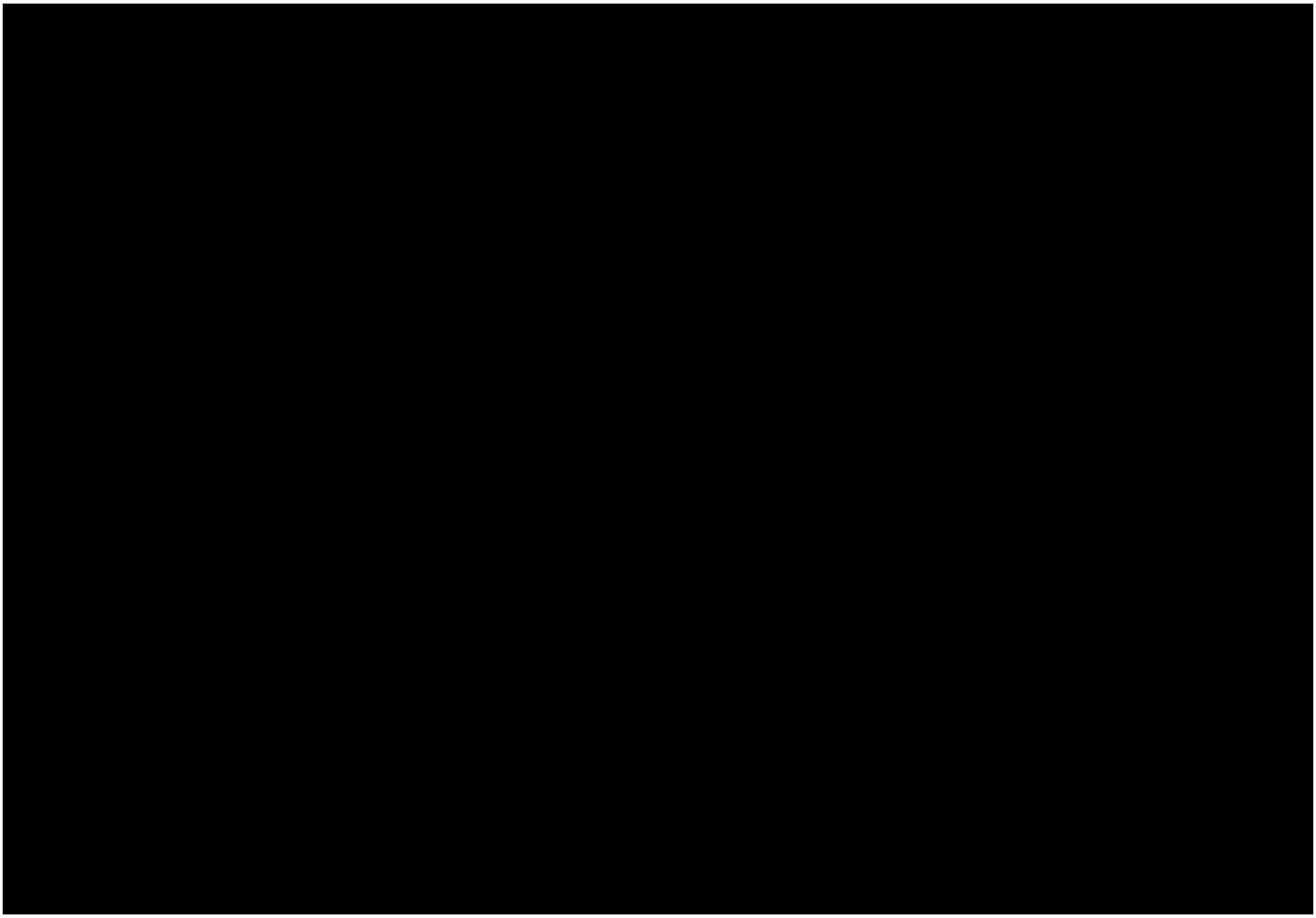


5) MCQ (2 PTS)

For publication-quality vector slides and precise labels in a PDF workflow, which defau
strongest?

- A) PNG only.
- B) GIF animations.
- C) SVG exports from charts that support it.
- D) Screenshot-only outputs.

Answer: C.

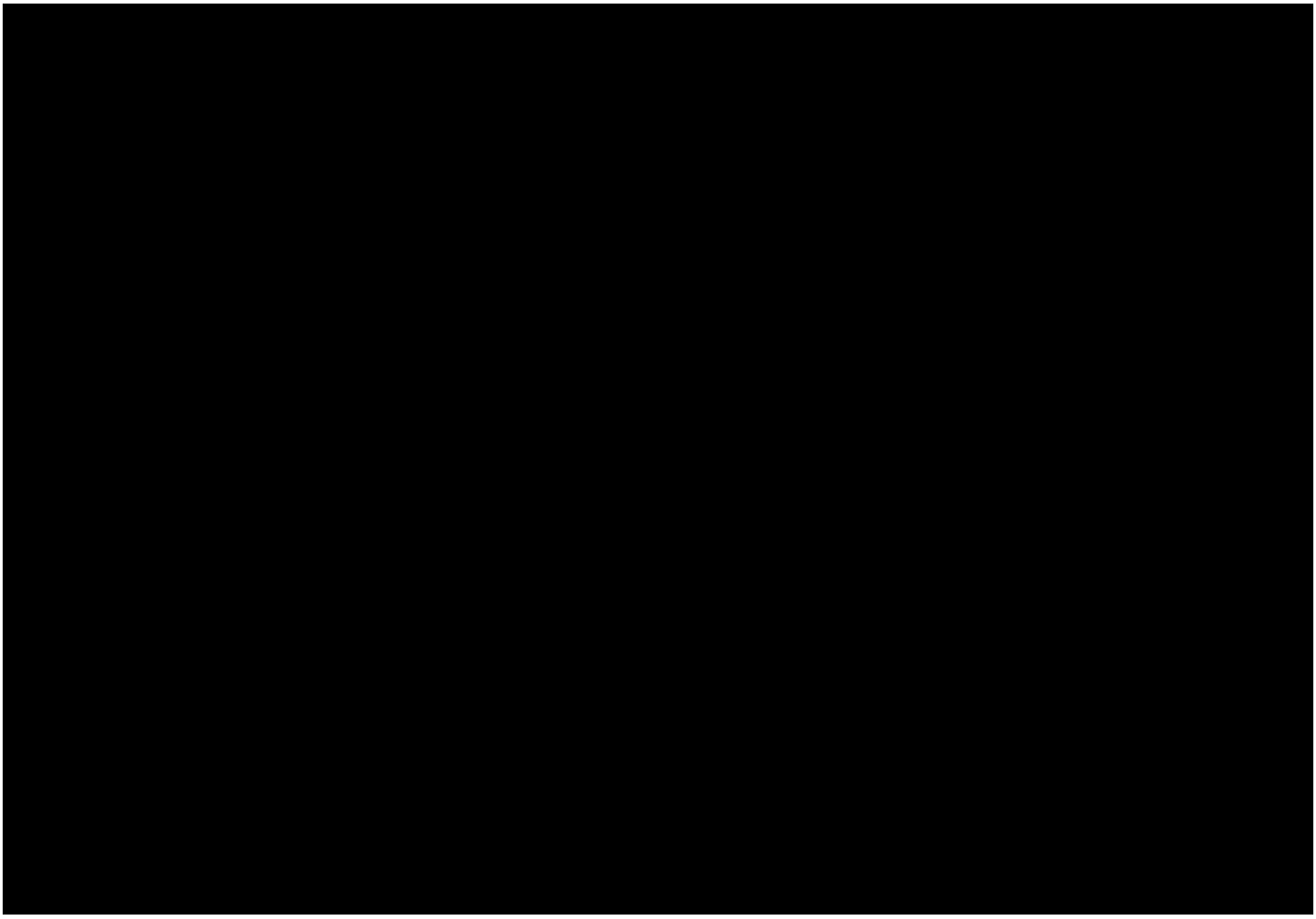


6) MULTIPLE ANSWERS (1 PT)

Select all that are valid reasons to prefer HTML over raster outputs.

- A) Need built-in hover tooltips and interaction.
- B) Need lightweight, fully static printing at 300 DPI.
- C) Need lightweight sharing in a browser and scriptable interactions.
- D) Team has inconsistent browsers and no JS support.
- E) Need crisp scaling of text and paths in web reports.

Answer: A, C, E.



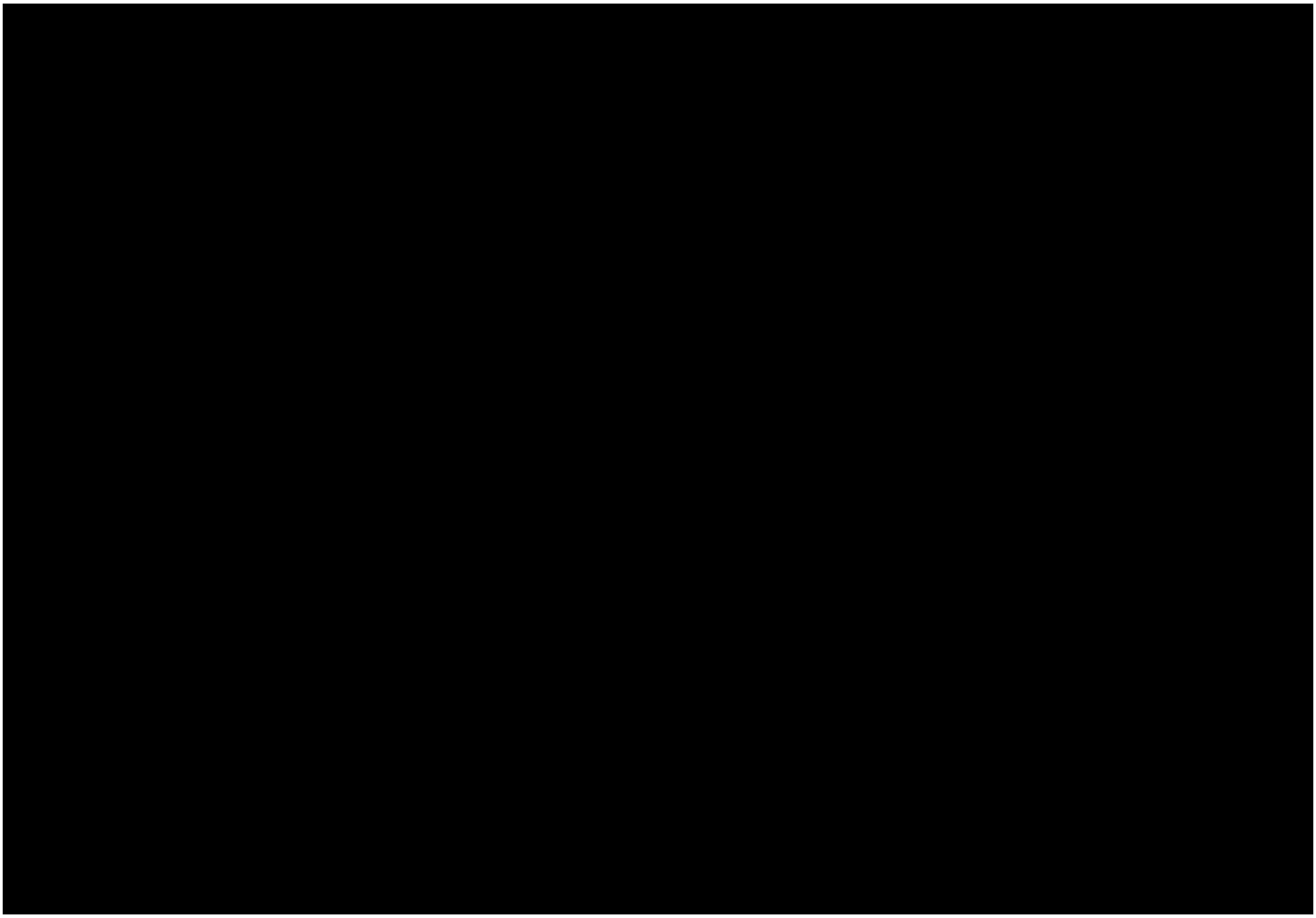
7) MATCHING (1 PT)

Match the phrase to its primary implication.

- "Inputs → function → outputs" in app design.
- "Good defaults" in interactive charts.
- "Visible state reset".

- i) Core callback architecture.
- ii) Interaction should work before hovering.
- iii) Undoable state prevents misinterpretation.

Answer: 1→i, 2→ii, 3→iii.

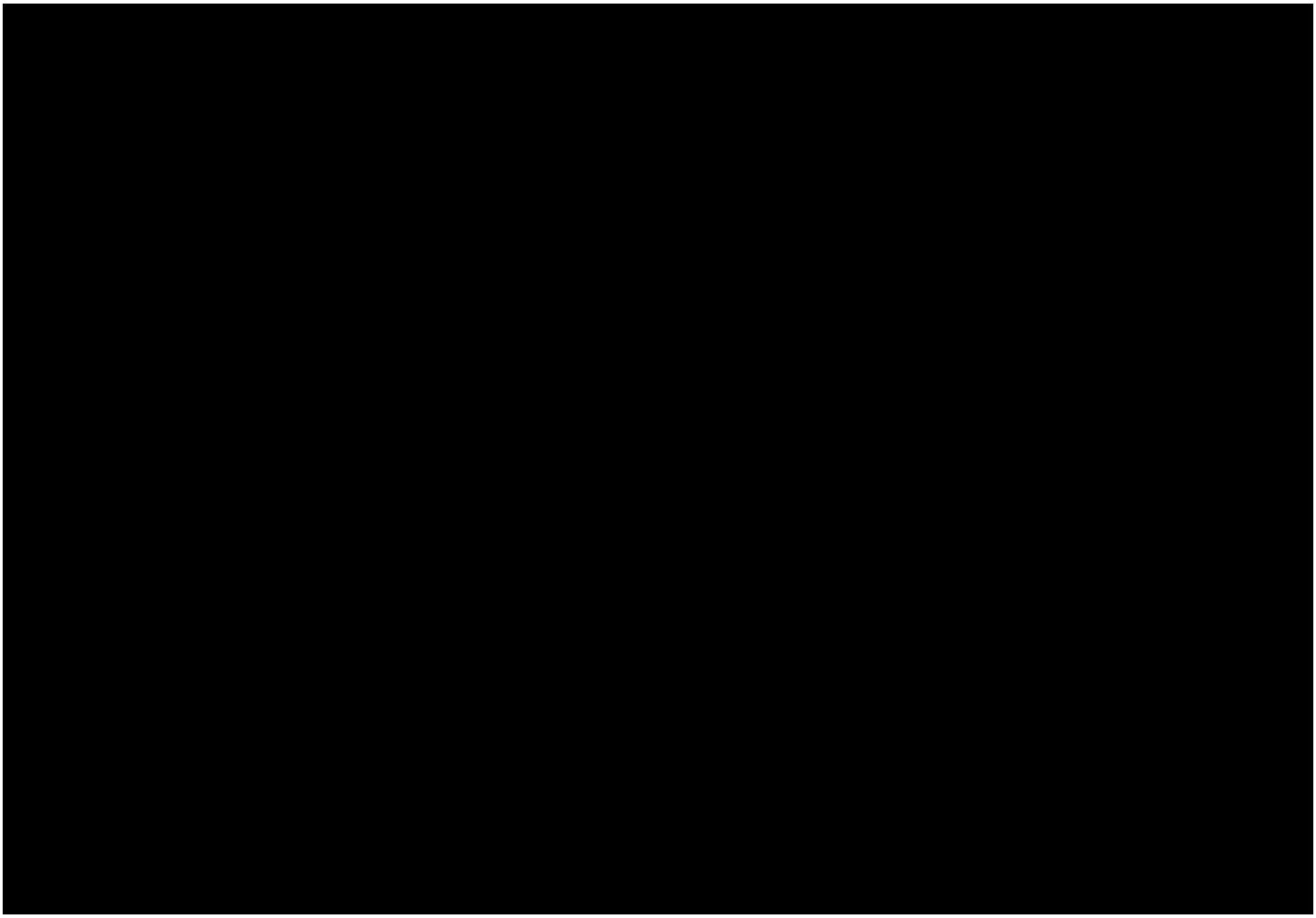


8) MCQ (1 PT)

A chart interaction works only on hover and fails when captured for review. What is the redesign?

- A) Keep hover logic and hide issue from static view.
- B) Remove interactivity completely.
- C) Add persistent labels/default callouts + non-hover fallback while preserving hove
- D) Increase tooltip font size only.

Answer: C.

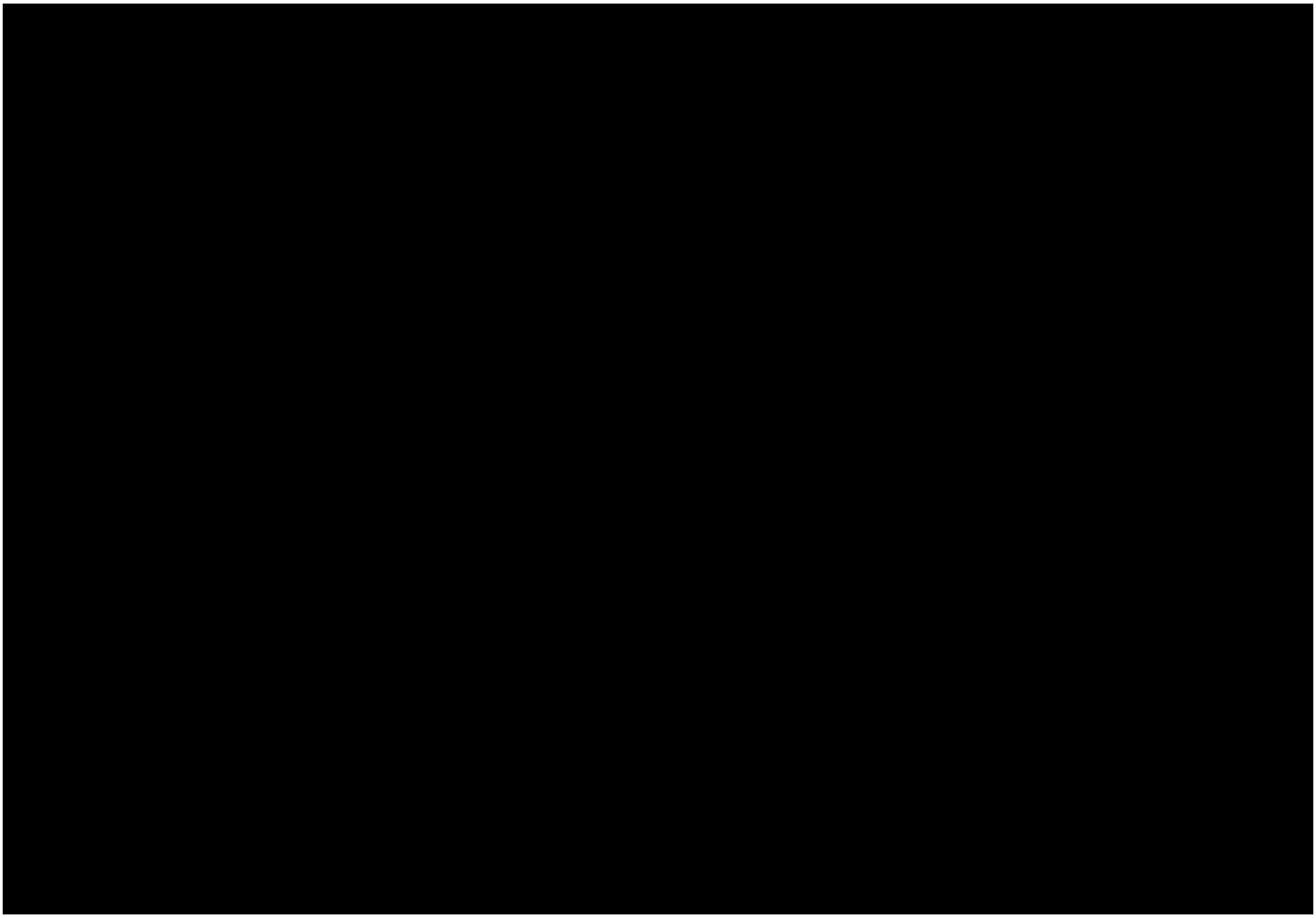


9) MULTIPLE ANSWERS (1 PT)

When building cross-module dashboards with interaction, choose all required guardrai

- A) Central interaction bus for filters and highlight state.
- B) Fixed scales across module switches.
- C) Independent legend meaning per module.
- D) Clear export/readiness checks per output format.
- E) One global data cache only for static screenshots.

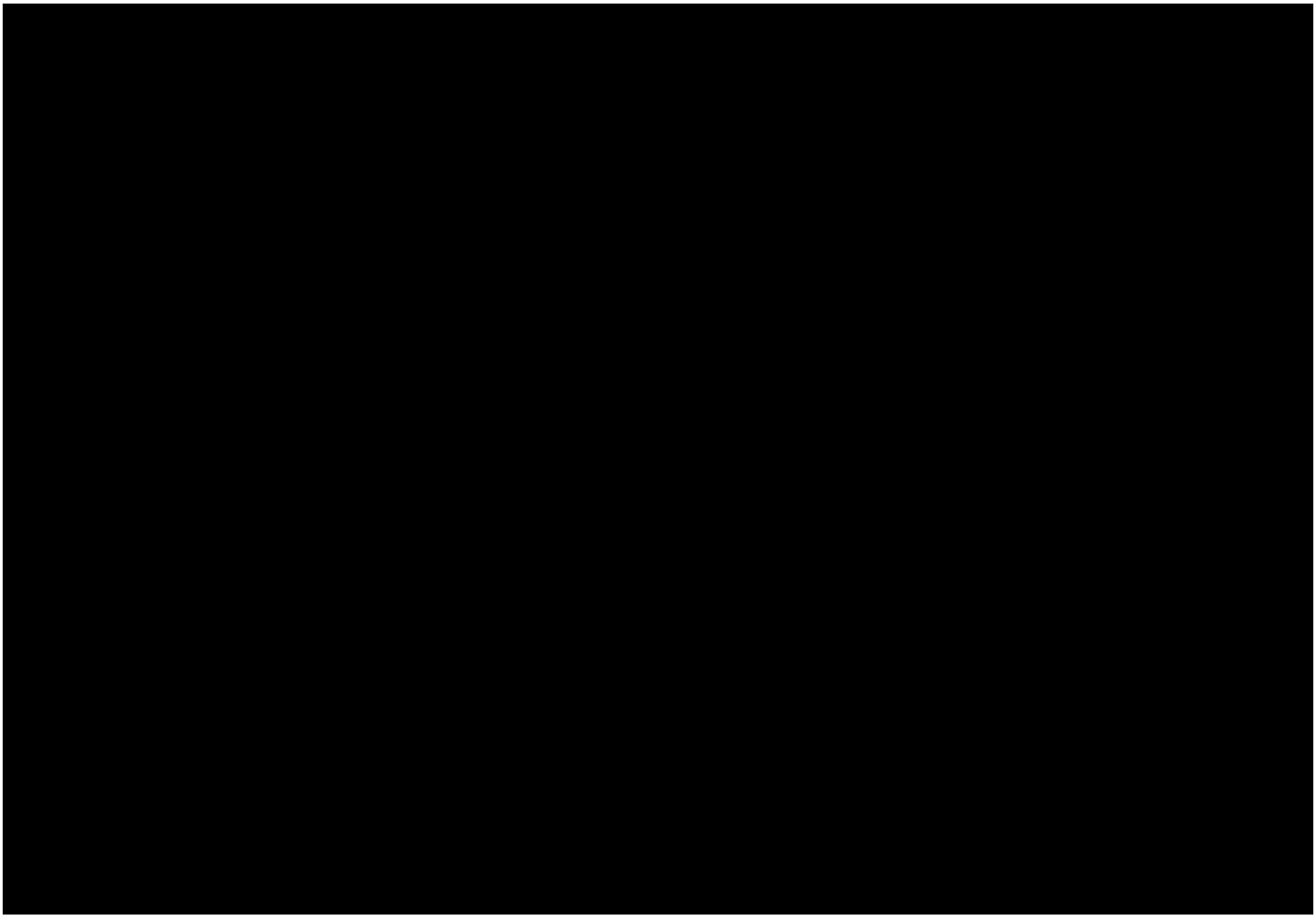
Answer: A, B, D.



10) INTEGRATIVE SCENARIO (1 PT)

You must build one page with: (i) abstraction-first pipeline, (ii) tabular trend, (iii) dashbo graph module, (v) spatial overlay, and (vi) web-app export. In one sentence, propose a implementation checkpoints.

Answer:

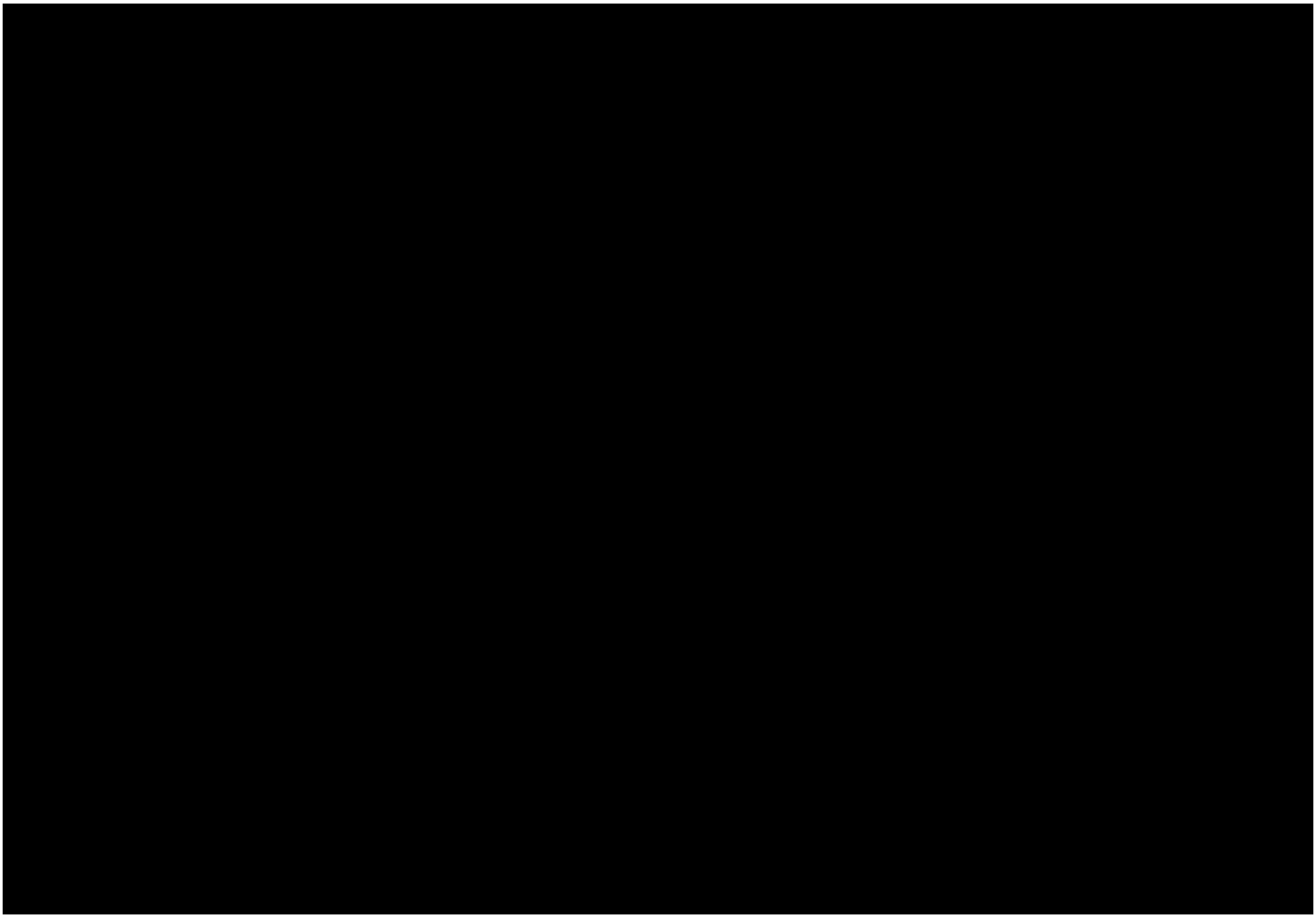


11) MCQ (1 PT)

For a new long-form course module, which sequence should come first in a tight instru

- A) Proofs first, visuals second, case studies last.
- B) Plan and outcomes first, then practical design sequence.
- C) Interactivity demos first, then abstraction.
- D) Spatial maps first, then all other visualization types.

Answer: B.

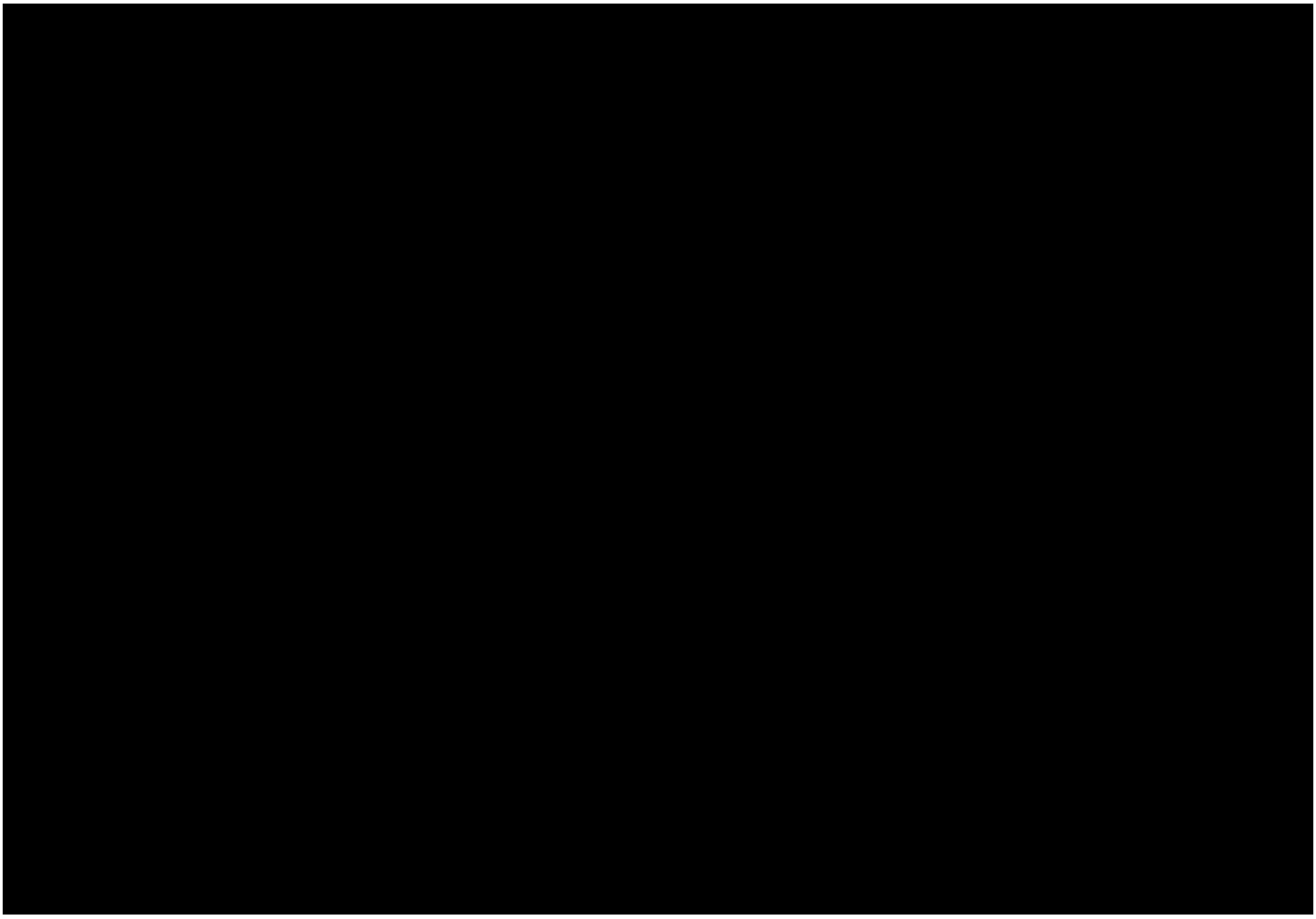


12) MCQ (2 PTS)

You receive the request: "Show if faculty performance dropped after policy change and helped." Which should be the first action before any chart is selected?

- A) Ask if the audience prefers a donut chart and then scale bars to that aspect ratio.
- B) Convert the request into explicit tasks and data requirements (output, action, cor
- C) Normalize all metrics first and then choose a comparison template.
- D) Select a network view in case performance relationships need to be inferred.

Answer: B.



13) MATCHING (1 PT)

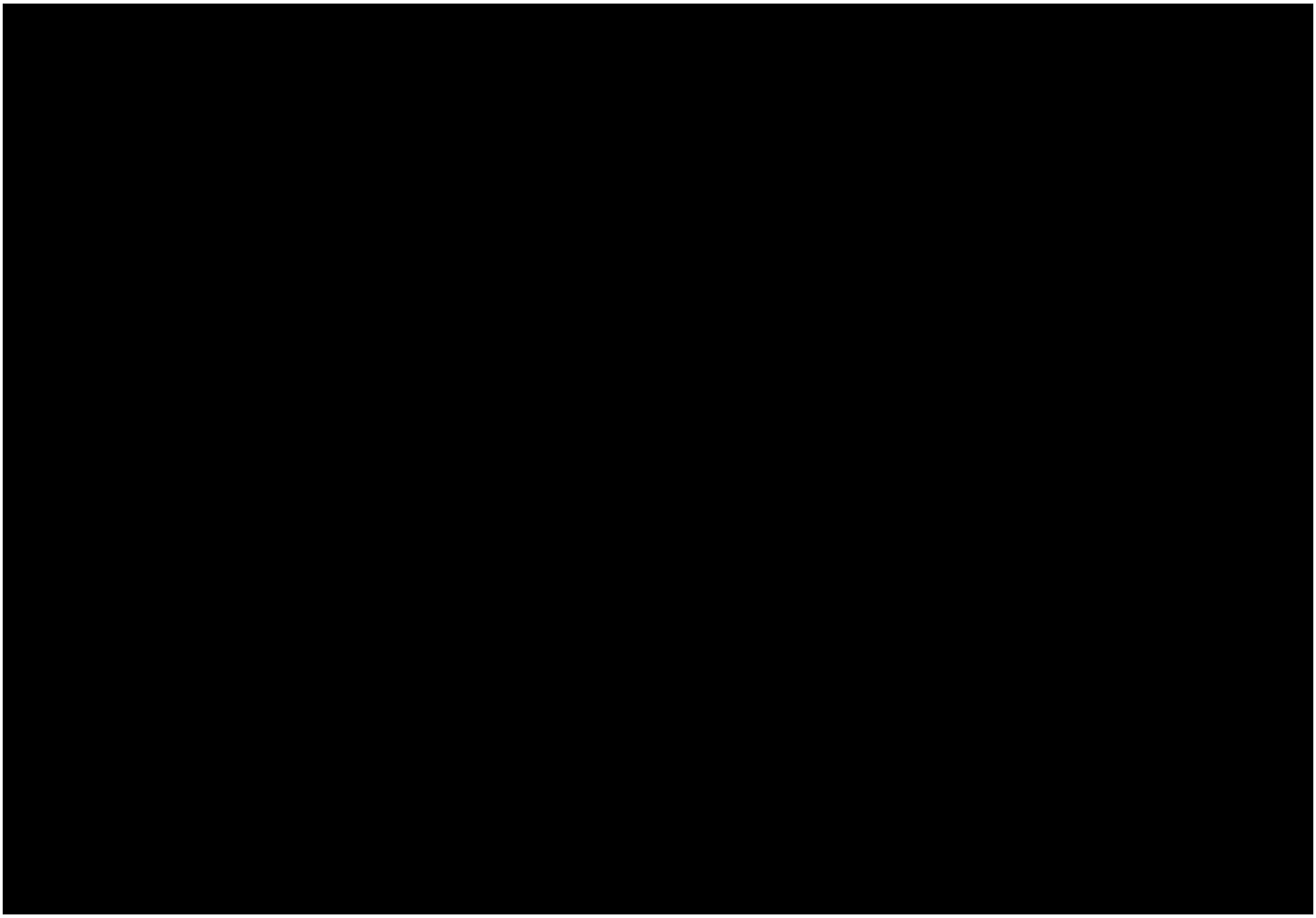
Match each statement to the abstraction error it most directly warns against.

- "A line chart of attendance and satisfaction is shown without stating that one is p
  is raw count."
- "A dashboard chooses a small-multiples layout for only 5 unique categories."
- "A pie chart is proposed first, then variables are forced into three mutually exclus

Errors:

- A) Baseline mismatch and untracked granularity.
- B) Overengineering first-pass layout without task evidence.
- C) Chart-first trap.

Answer: 1→A, 2→B, 3→C.

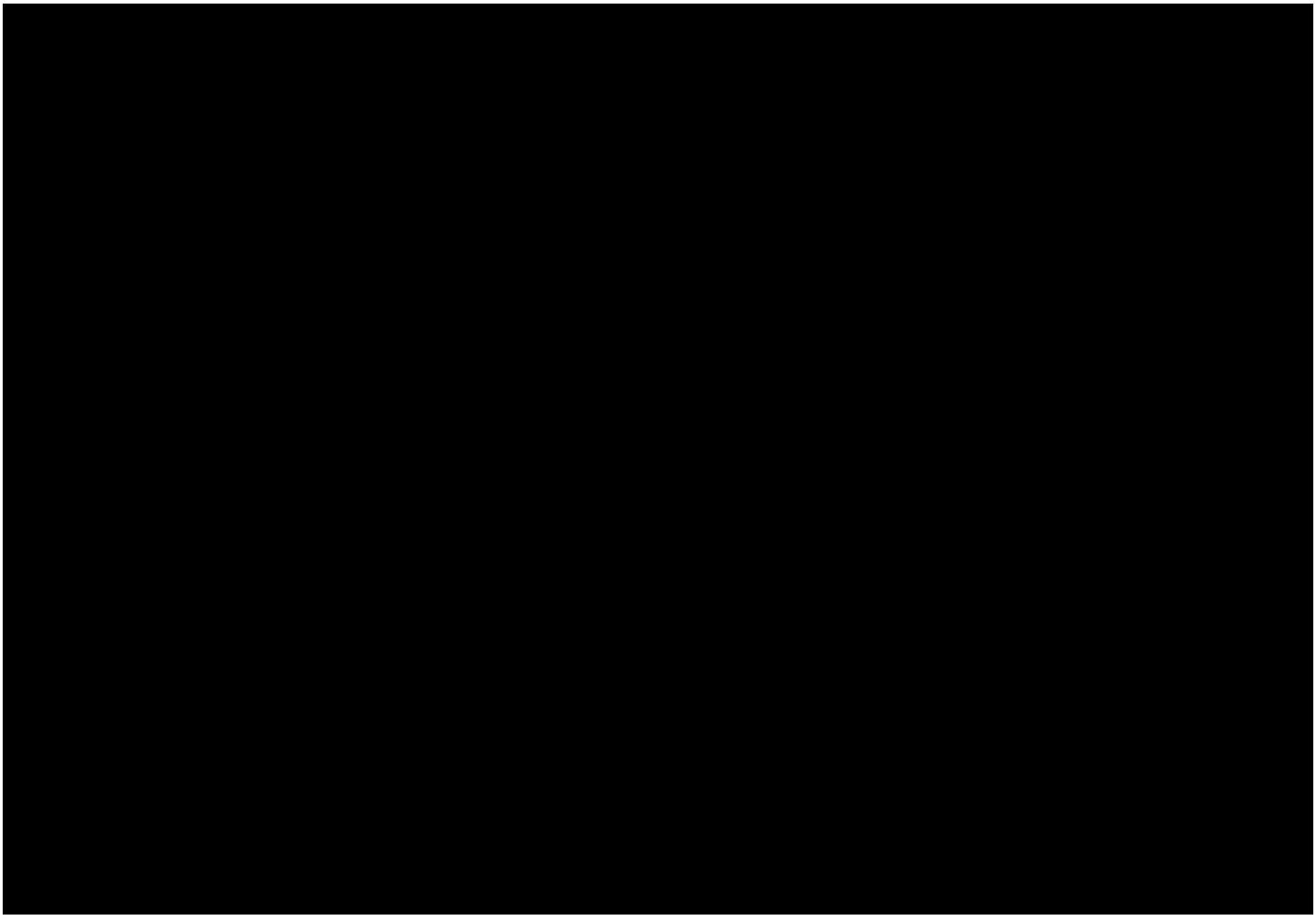


14) MULTIPLE ANSWERS (2 PTS)

Select all valid reasons to choose a dataset re-shape (tidy vs wide) before visualization

- A) A single task asks for comparisons across regions and dates.
- B) A distribution task includes outliers that must be grouped by cohort and period.
- C) A dashboard will only show one value card and no interactions.
- D) A spatial overlay will join regions from different source systems.
- E) A line chart is requested and data are stored already in one JSON blob per entity.

Answer: A, B, D.

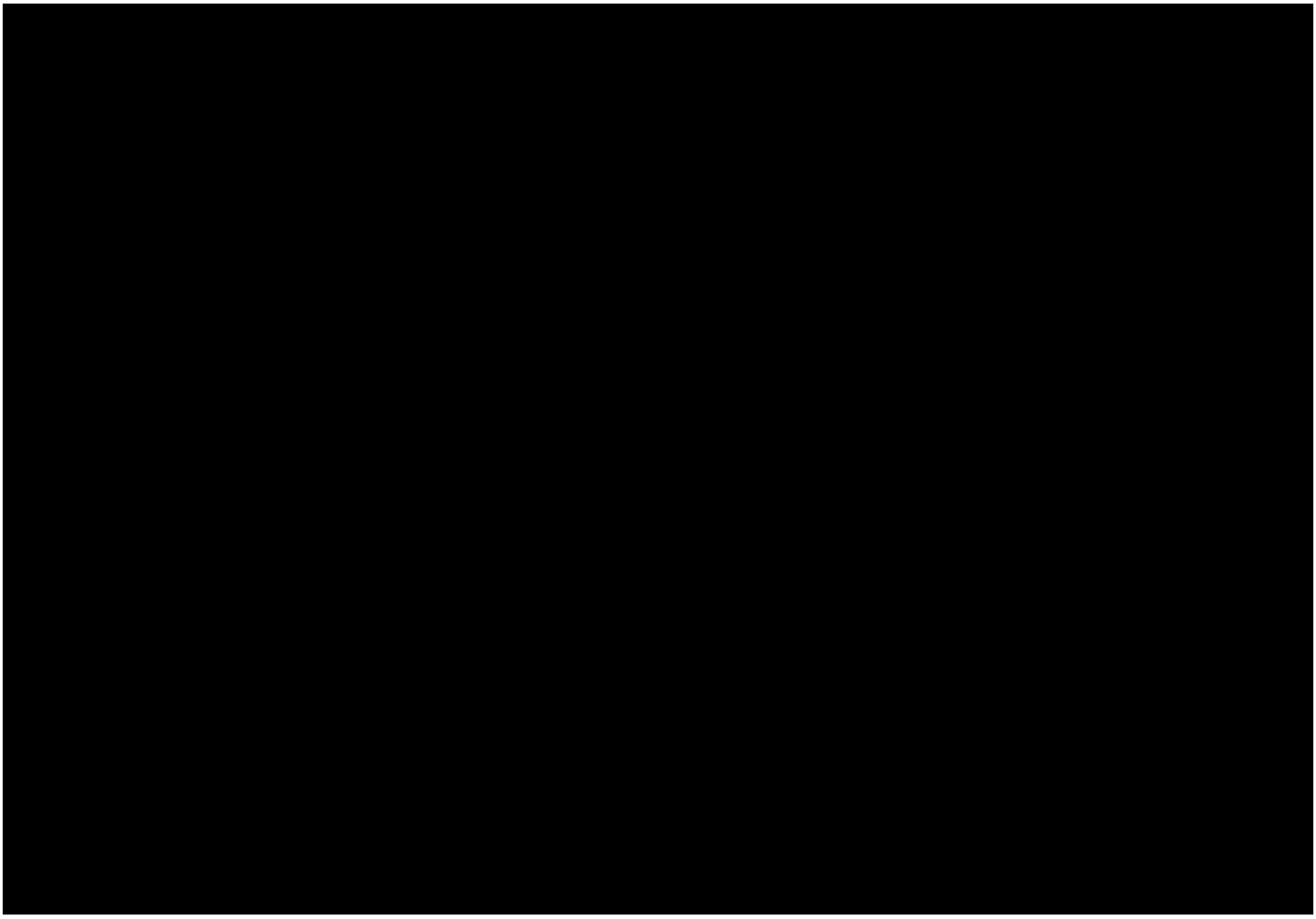


15) RANKING (2 PTS)

Rank the best first three steps for a high-stakes comparison question from most impor important (4):

- A) Choose chart type.
- B) Write the task statement (action, target, constraints, output).
- C) Resolve attribute scales (units, rate vs count, missingness, temporal unit).
- D) Choose color palette.

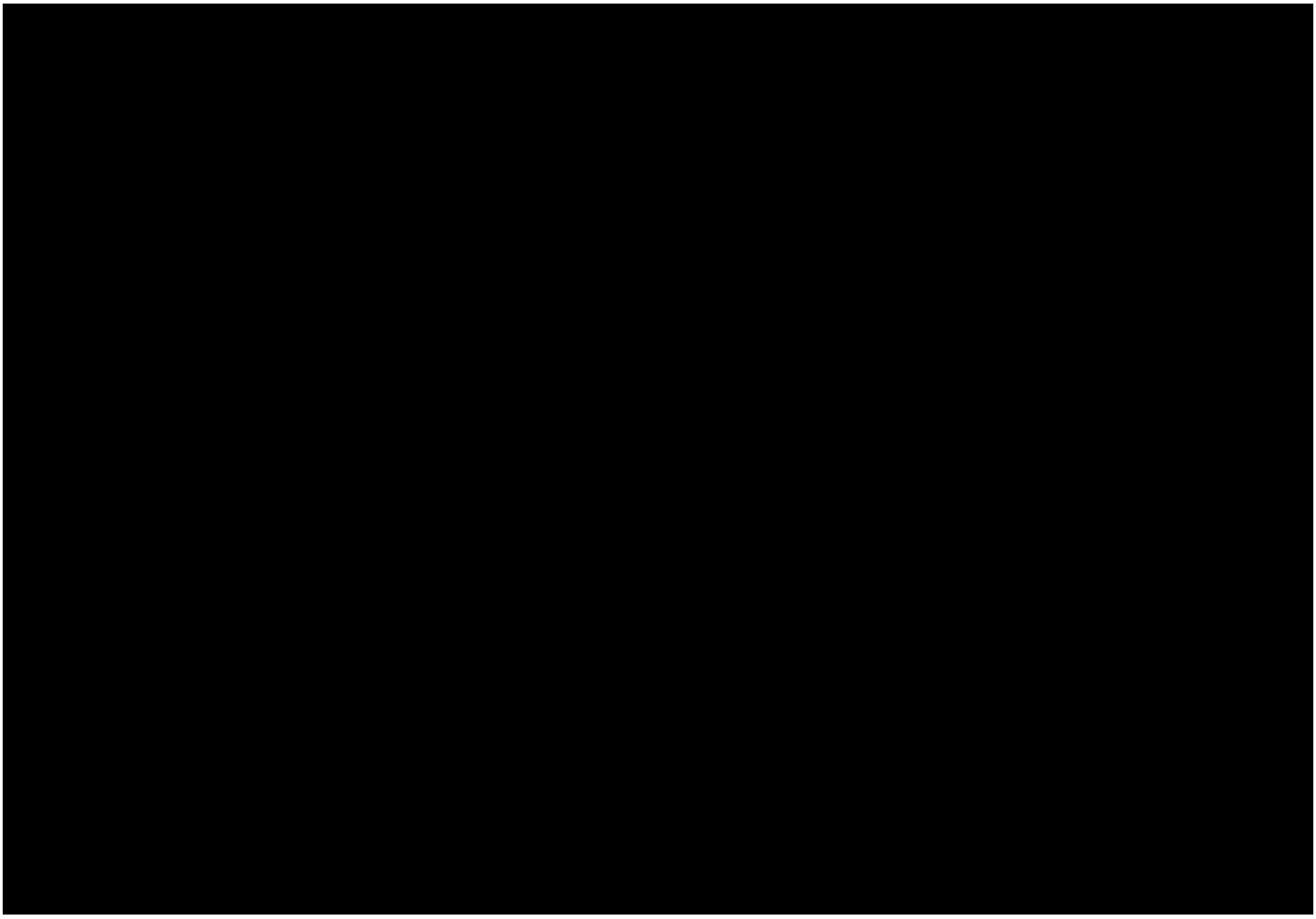
Answer: 1) B, 2) C, 3) A, 4) D.



16) SHORT ANSWER (2 PTS)

Rewrite this vague request into a defensible task statement template: "Compare city p
anomalies in monthly support fulfillment."

Answer: Action: compare monthly fulfillment across cities and detect outlier months fo
support-fulfillment records by city and month; Constraints: fixed baseline period, same
missing-month treatment; Output: ranked city-month anomaly list with trend view and

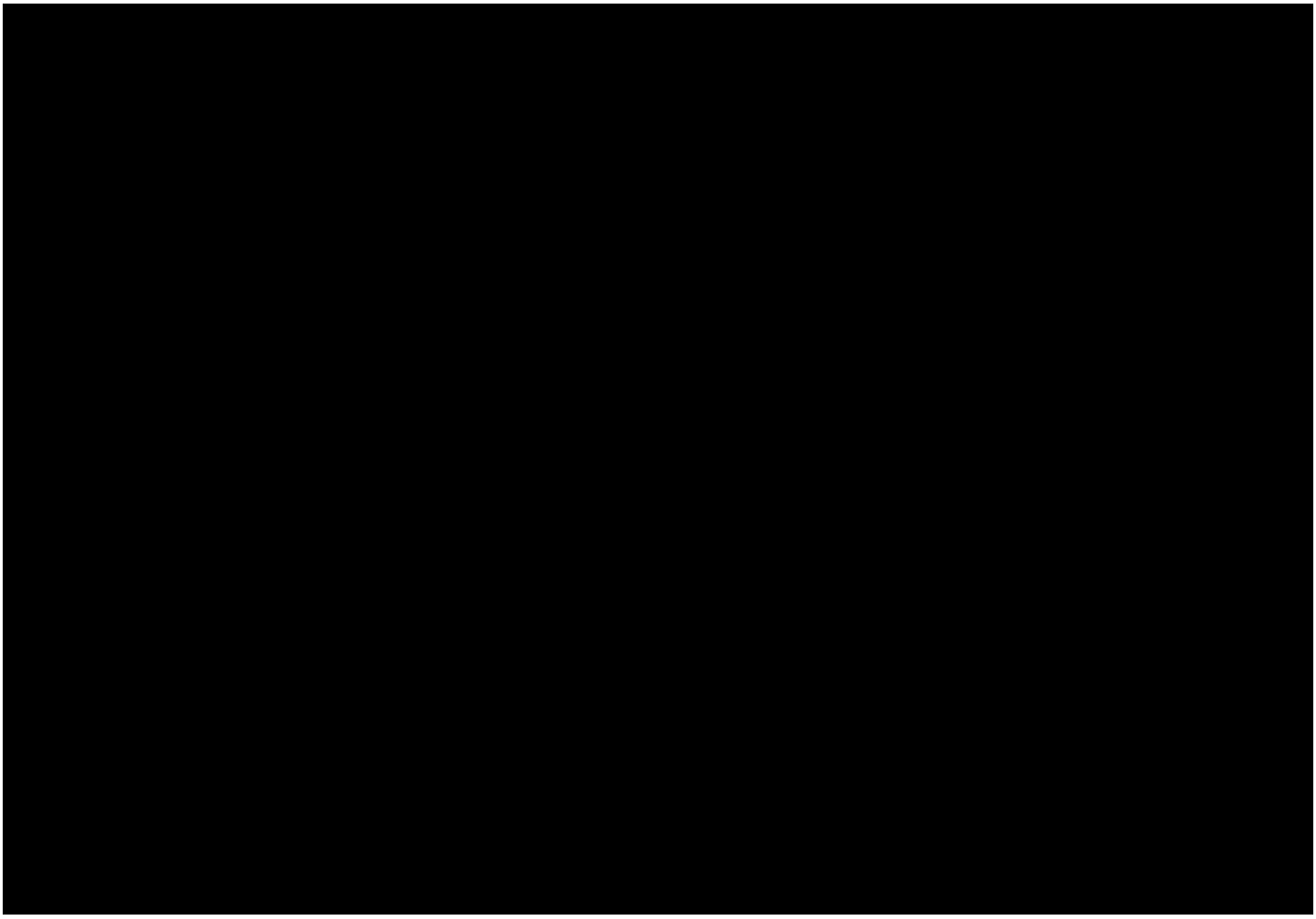


17) MCQ (2 PTS)

Which mapping is least appropriate for precise magnitude comparison?

- A) Position on a shared baseline
- B) Length along aligned axes
- C) Hue hue-shading differences
- D) Ordered bar endpoints

Answer: C.



18) MULTIPLE ANSWERS (2 PTS)

Choose all that are valid responses to the chart-reading rule “if attention is limited, redu

- A) Keep one strong visual hierarchy and limit color categories in first view.
- B) Add dual-axis to expose hidden patterns in one panel.