DATA101 Comprehensive Long Quiz - Set D (Answer Key)

50-Point Assessment Document (Answer Key)

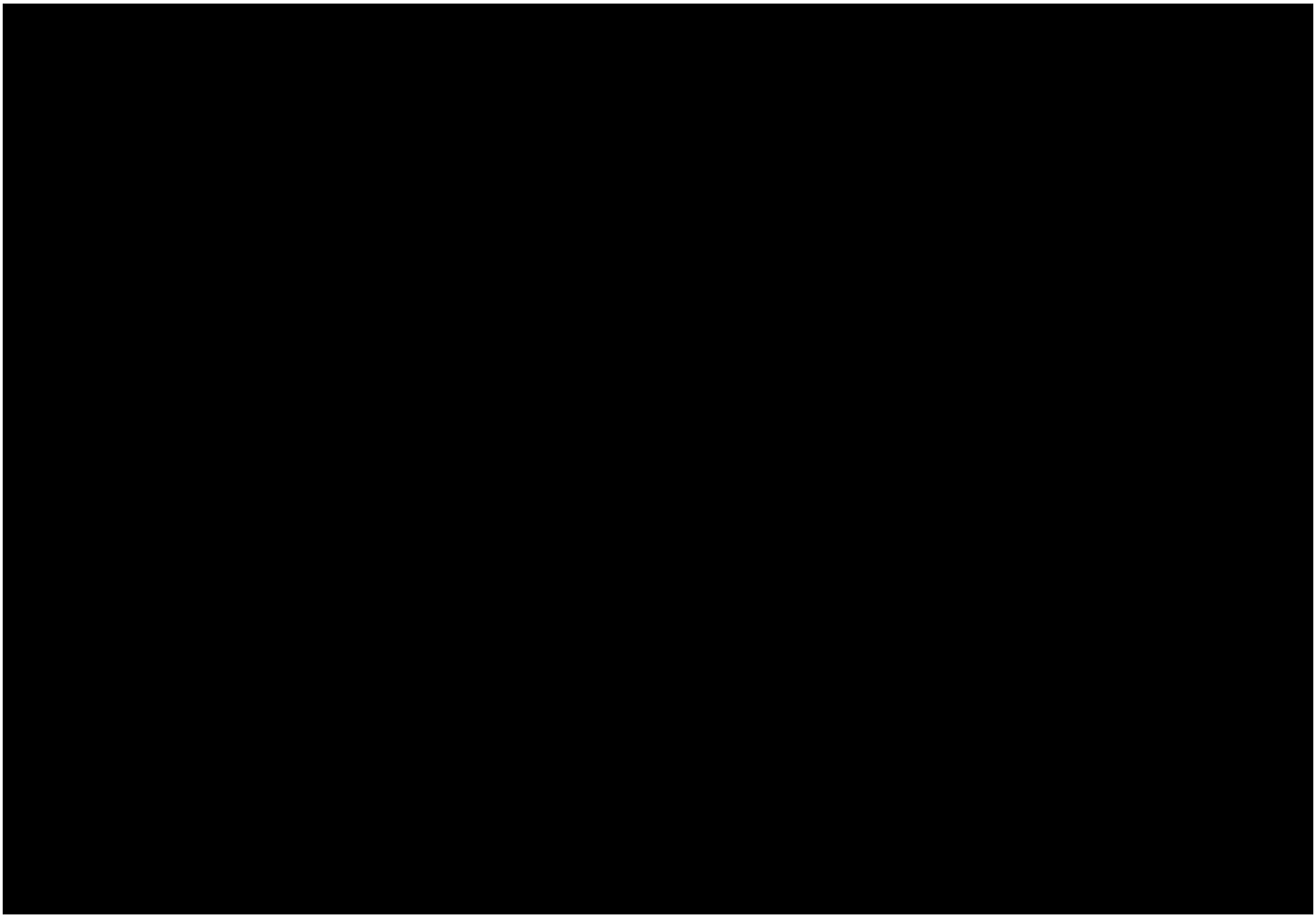
DATA 101: Data Visualization

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.



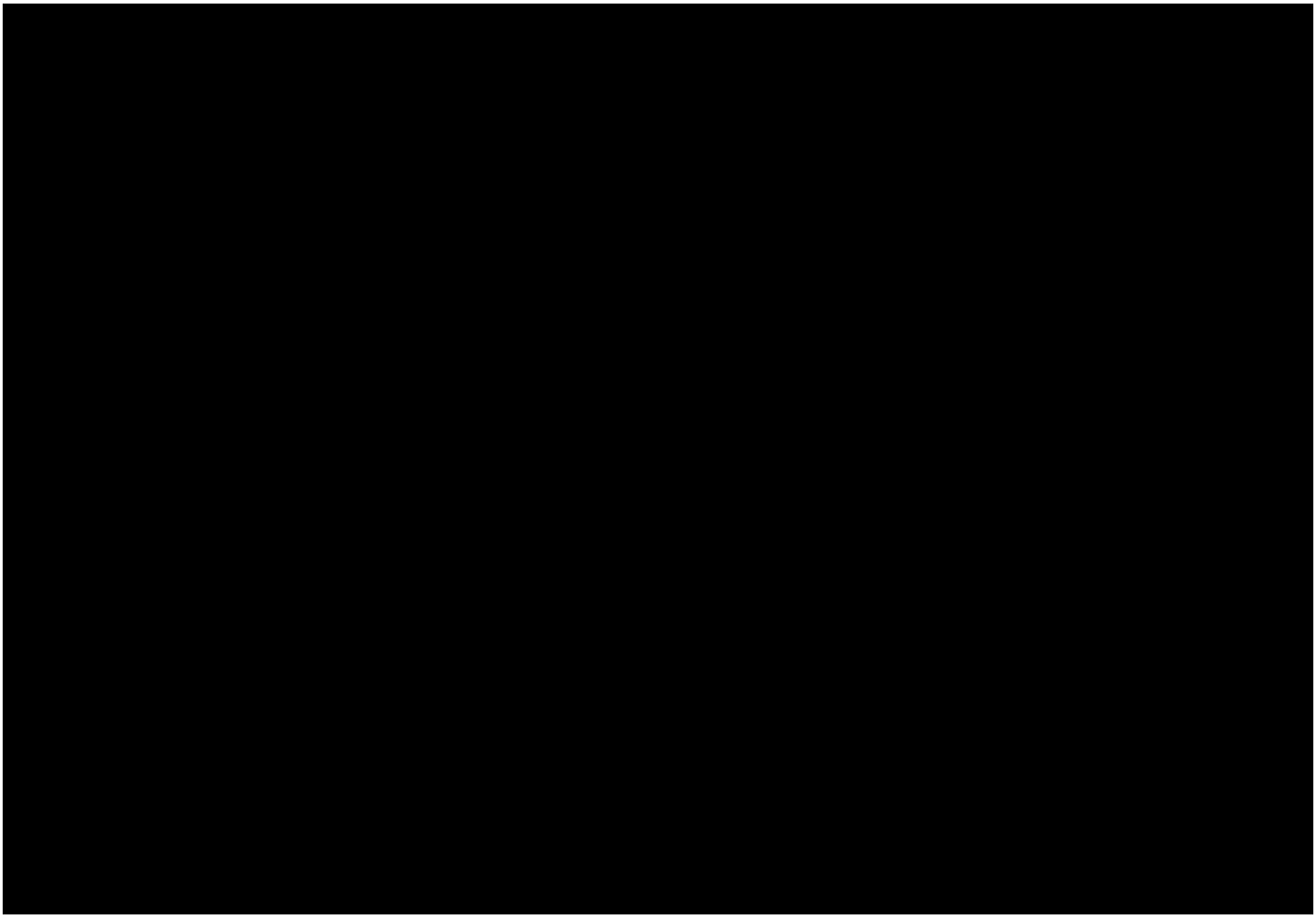
1) MATCHING (1 PT)

Match each pattern to intended outcome.

- Overview then decision lanes.
- Hide/show controls by intent.
- Operative cockpit with synchronized interactions.

- i) reduce cognitive split between context and action.
- ii) preserve shared analytical continuity.
- iii) reduce visual noise and protect first load speed.

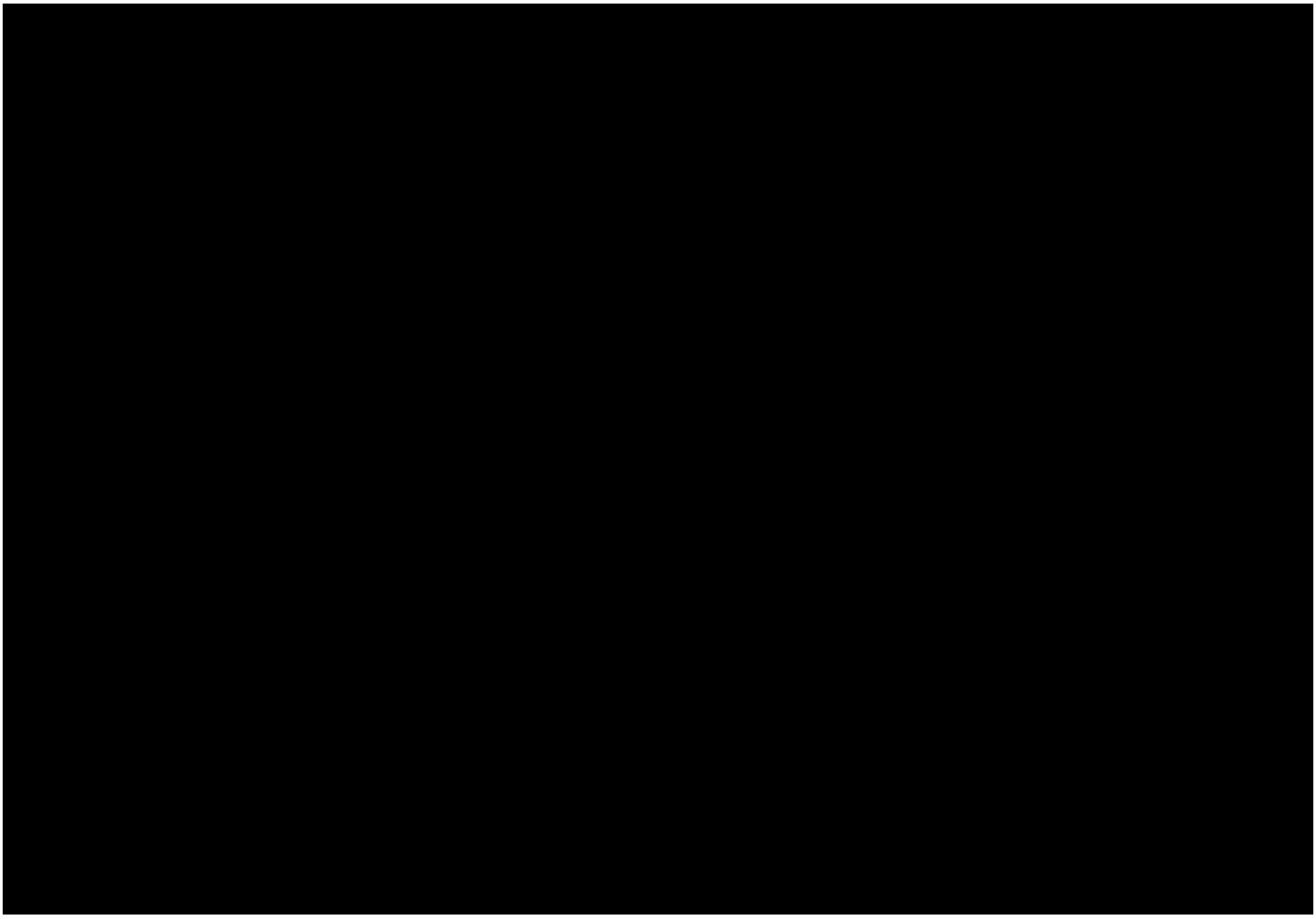
Answer: 1→i, 2→iii, 3→ii.



2) SHORT ANSWER (2 PTS)

A dashboard has 5 KPIs, 4 actions, and 8 filters but users complain about fatigue. Spe
versus hidden controls.

Answer: Keep high-signal KPIs + current state/time horizon visible; expose secondary
drawers and reveal deeper diagnostics only after user intent or drill state so working se
default.

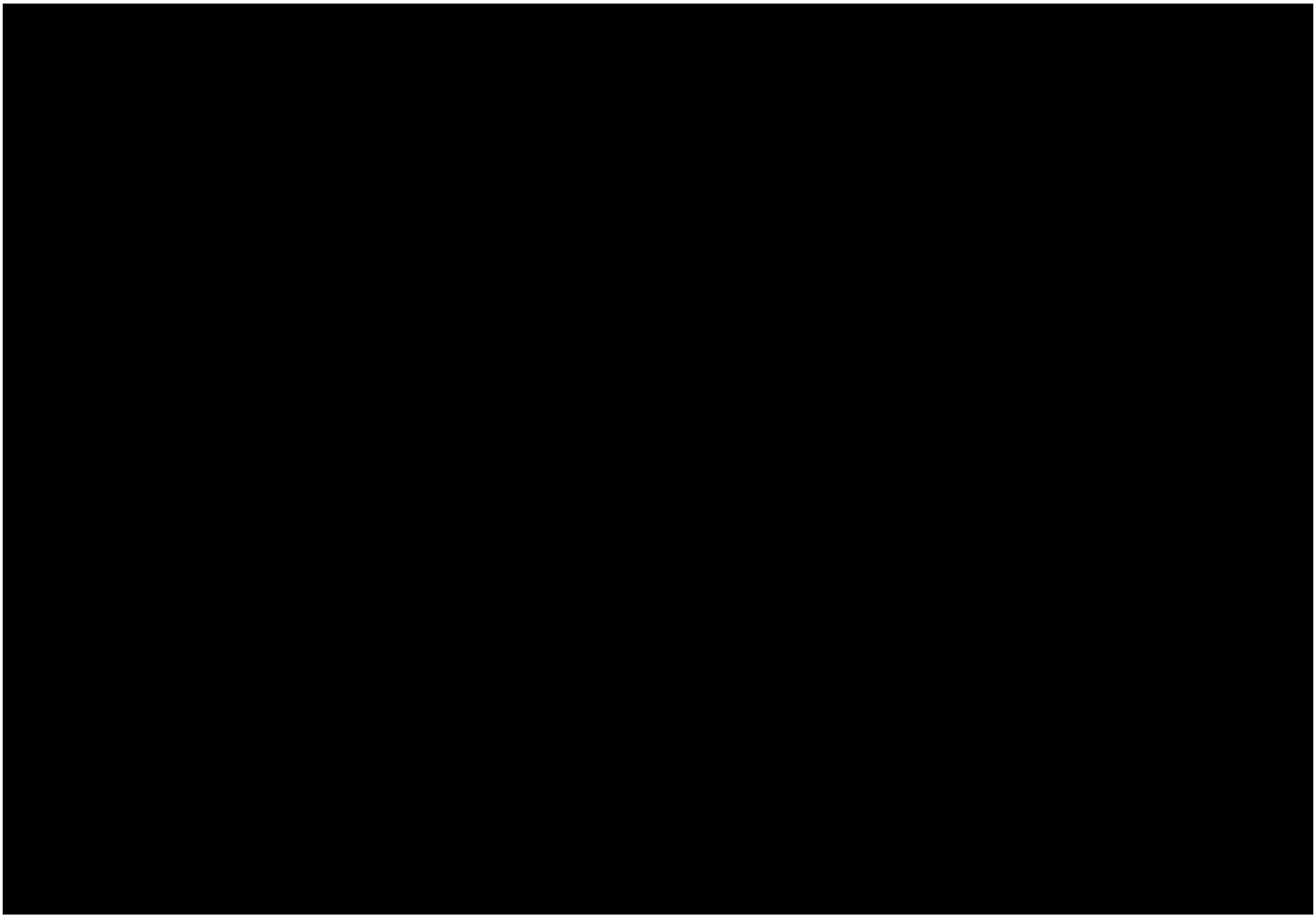


3) MCQ (1 PT)

You need community structure + bridge detection on 25k sparse nodes for executives.

- A) Node-link only, no edge weight.
- B) Matrix only, no ordering.
- C) Hybrid node-link overview + matrix for dense clusters.
- D) Treemap of degree counts only.

Answer: C.

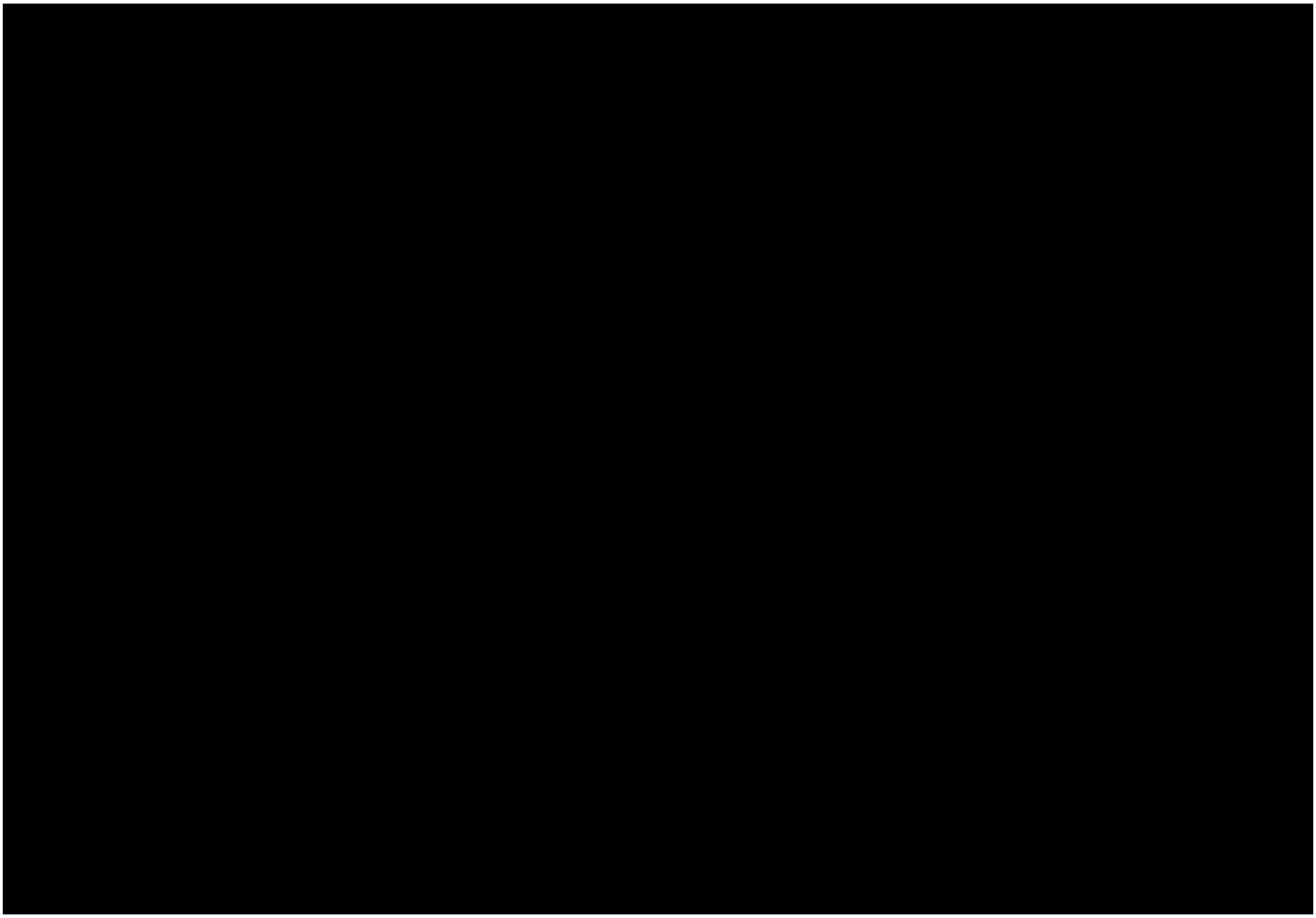


4) MULTIPLE ANSWERS (1 PT)

Select all valid reasons to add a matrix view alongside node-link.

- A) Dense/near-complete regions create entangled edge crossings.
- B) Need to inspect block structure and co-membership.
- C) Need intuitive path tracing at first pass for stakeholders.
- D) Need to inspect asymmetry and edge direction.
- E) Need to keep node labels always visible without hover.

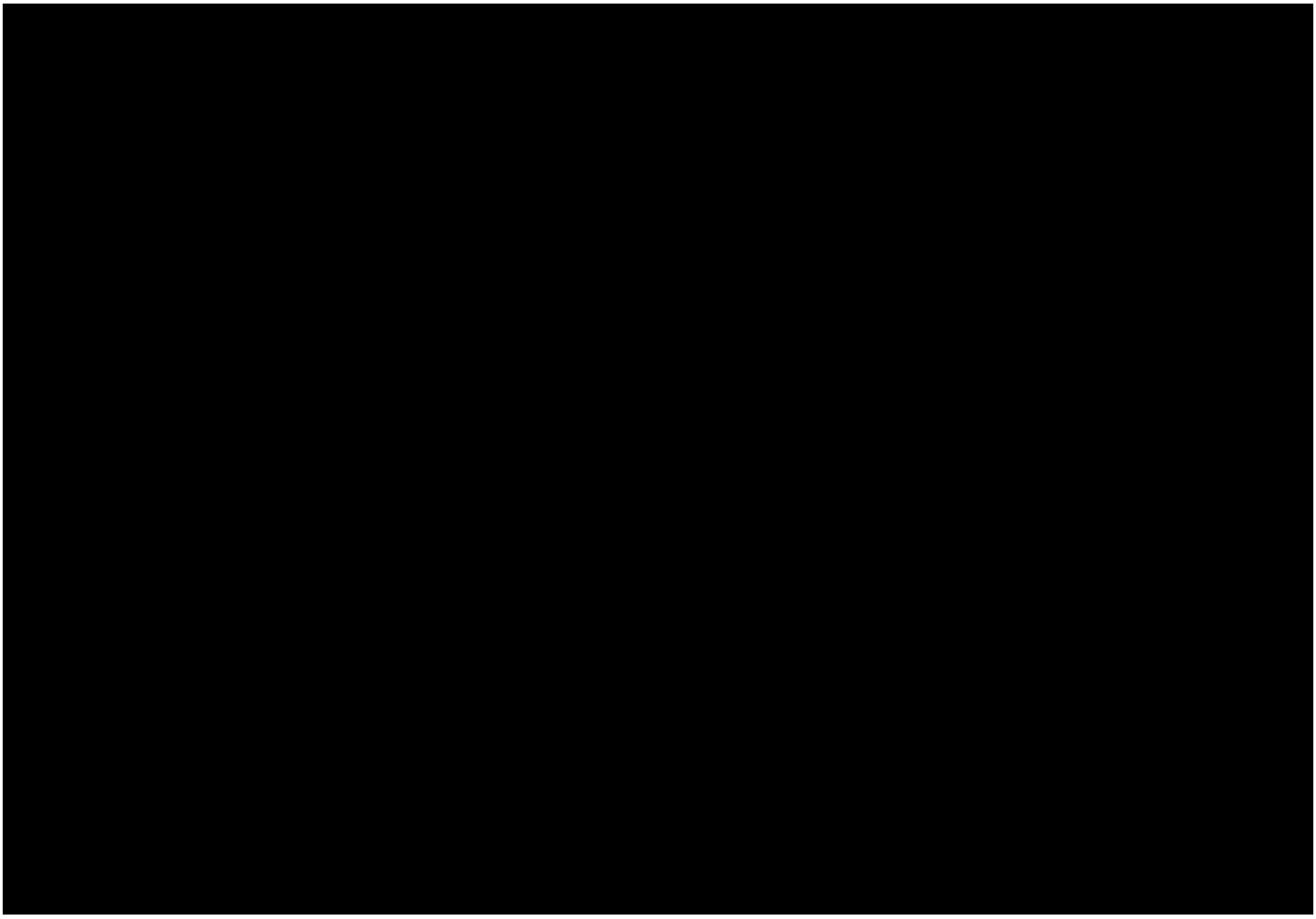
Answer: A, B.



5) SHORT ANSWER (2 PTS)

For directed-signed graphs, which fields are required and how should polarity and stre
encoding?

Answer: Use source, target, weight, and sign/polarity (plus optional time/type fields); e
hue/arrow orientation and strength via line width/opacity/brightness so channels do nc
magnitude.



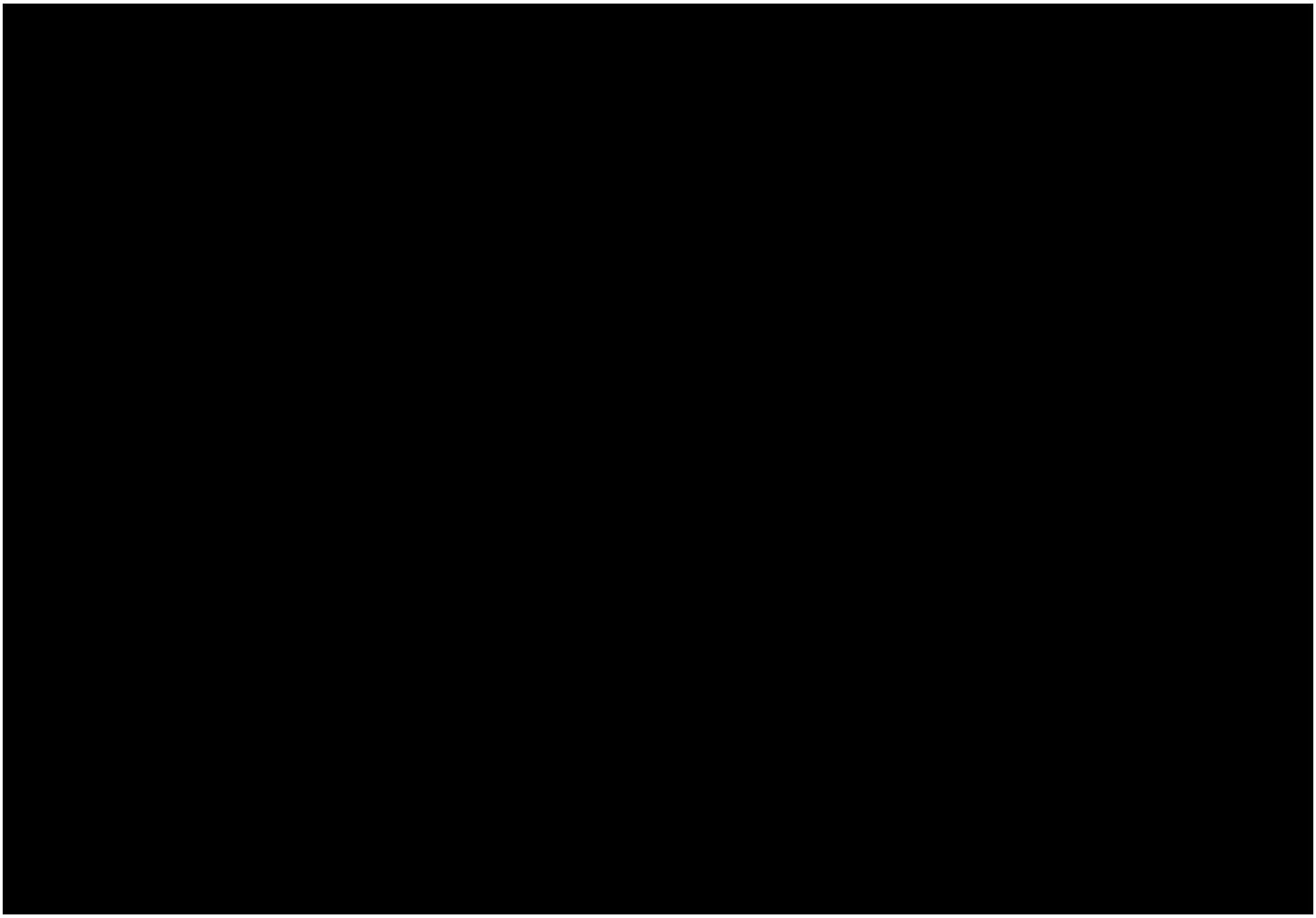
6) MATCHING (1 PT)

Match task and graph layout.

- Report allocation share by branch.
- Highlight bridge nodes and cut-edges.
- Inspect dense community blocks quickly.

- A) Node-link primary + matrix secondary.
- B) Treemap primary + node-link secondary.
- C) Matrix primary + node-link secondary.

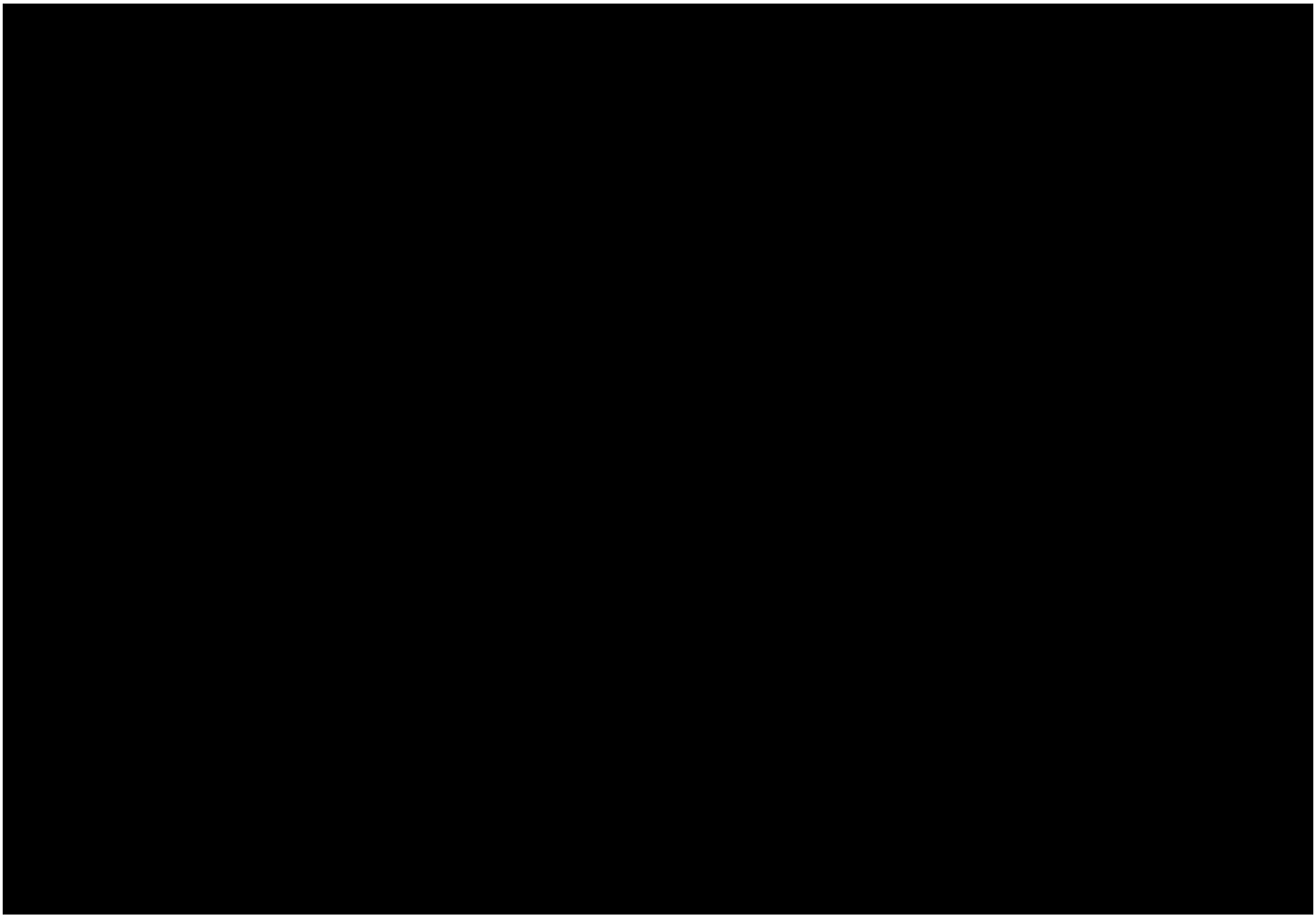
Answer: 1→B, 2→A, 3→C.



7) 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

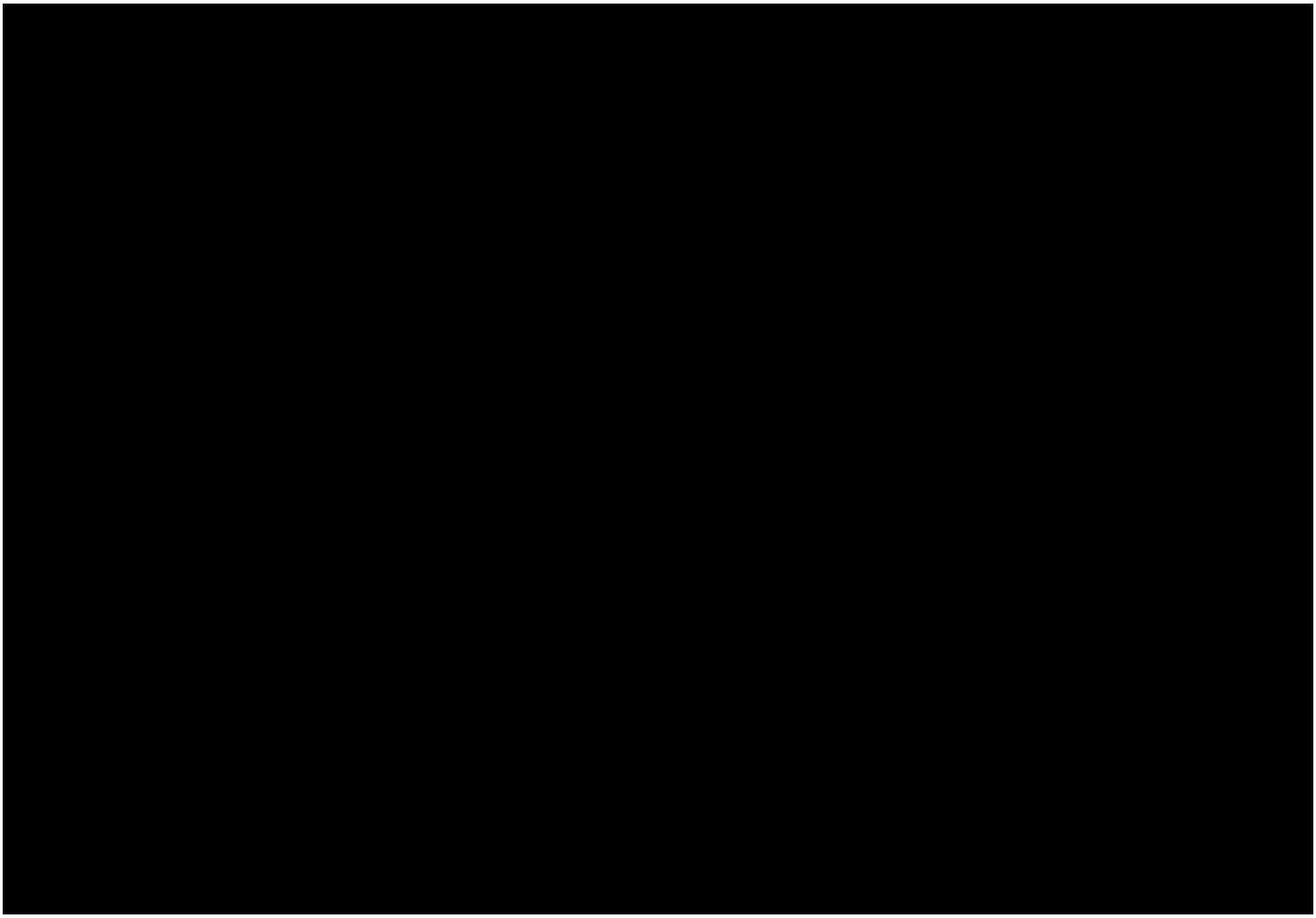


8) MCQ (1 PT)

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.

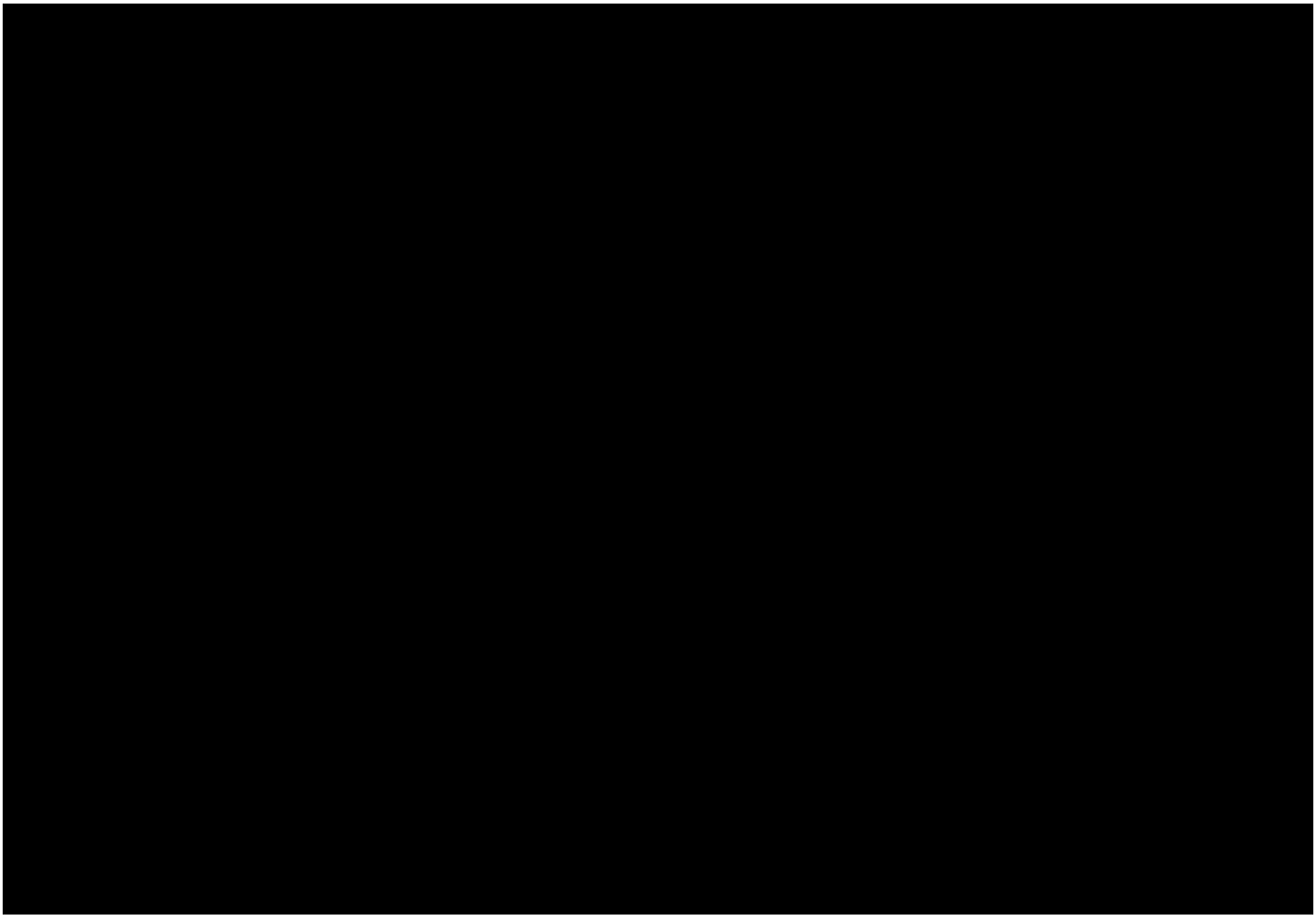


9) MULTIPLE ANSWERS (2 PTS)

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.

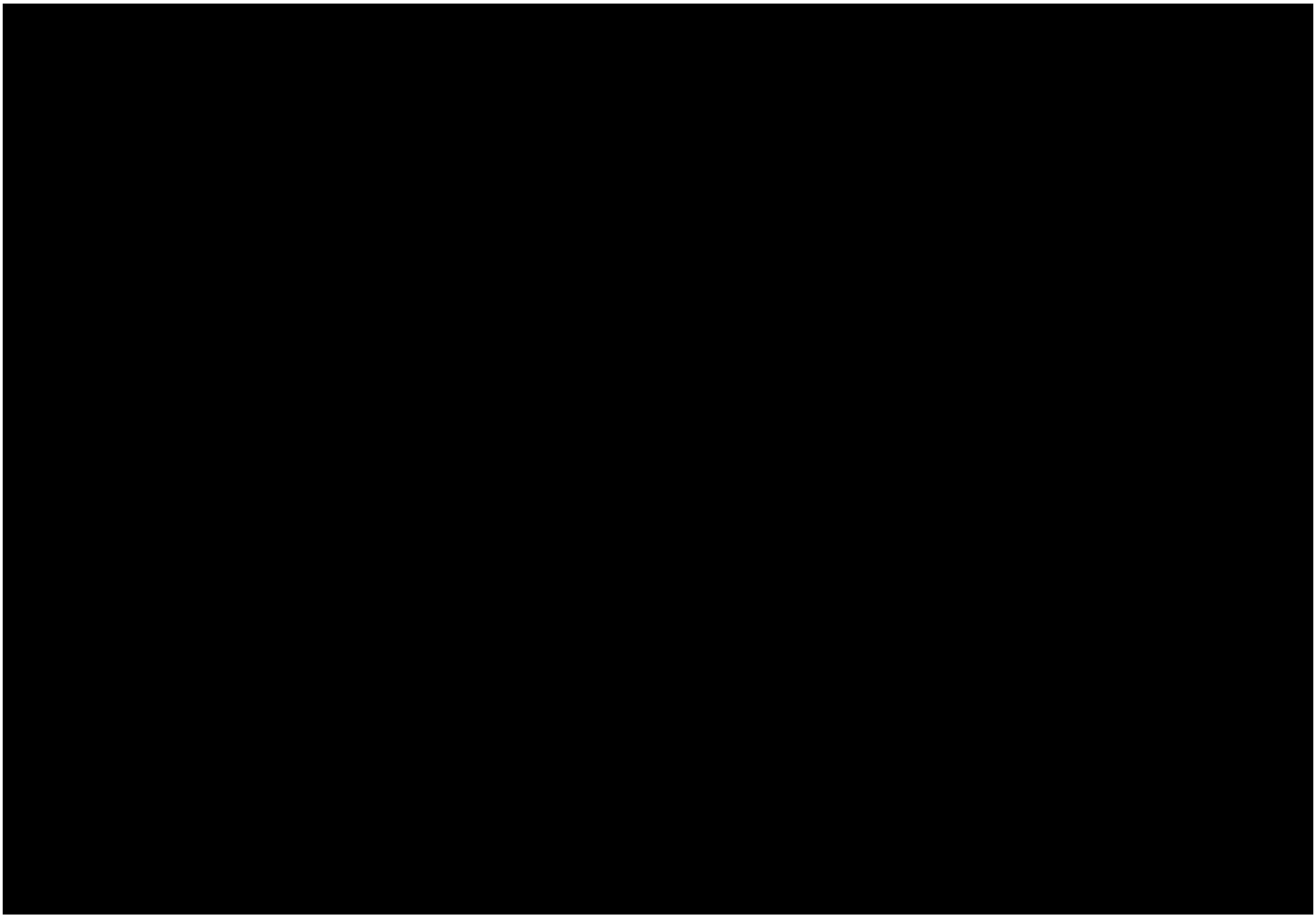
Answer: A, B, C, E.



10) 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

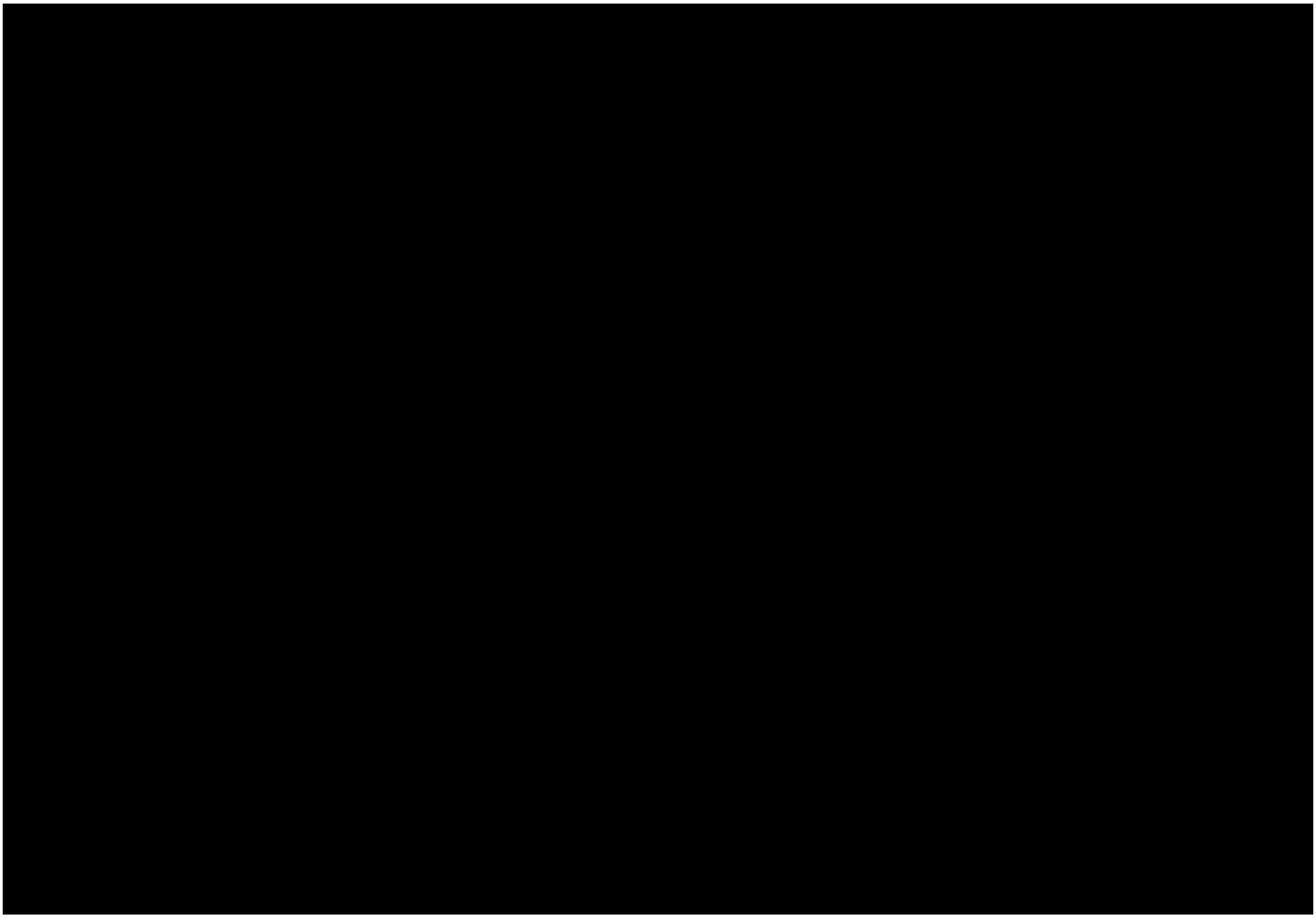


11) MCQ (2 PTS)

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.

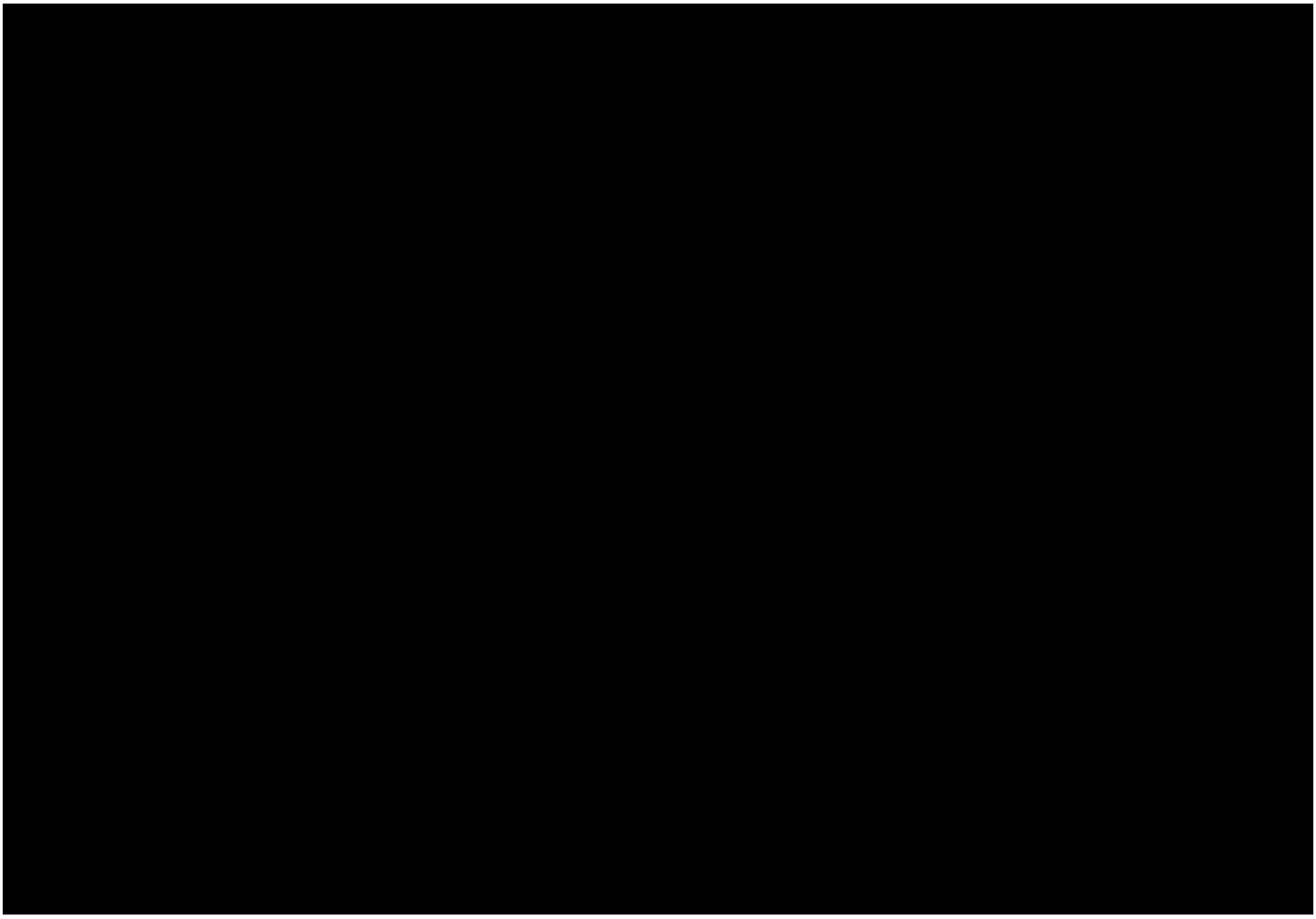


12) MULTIPLE ANSWERS (1 PT)

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.



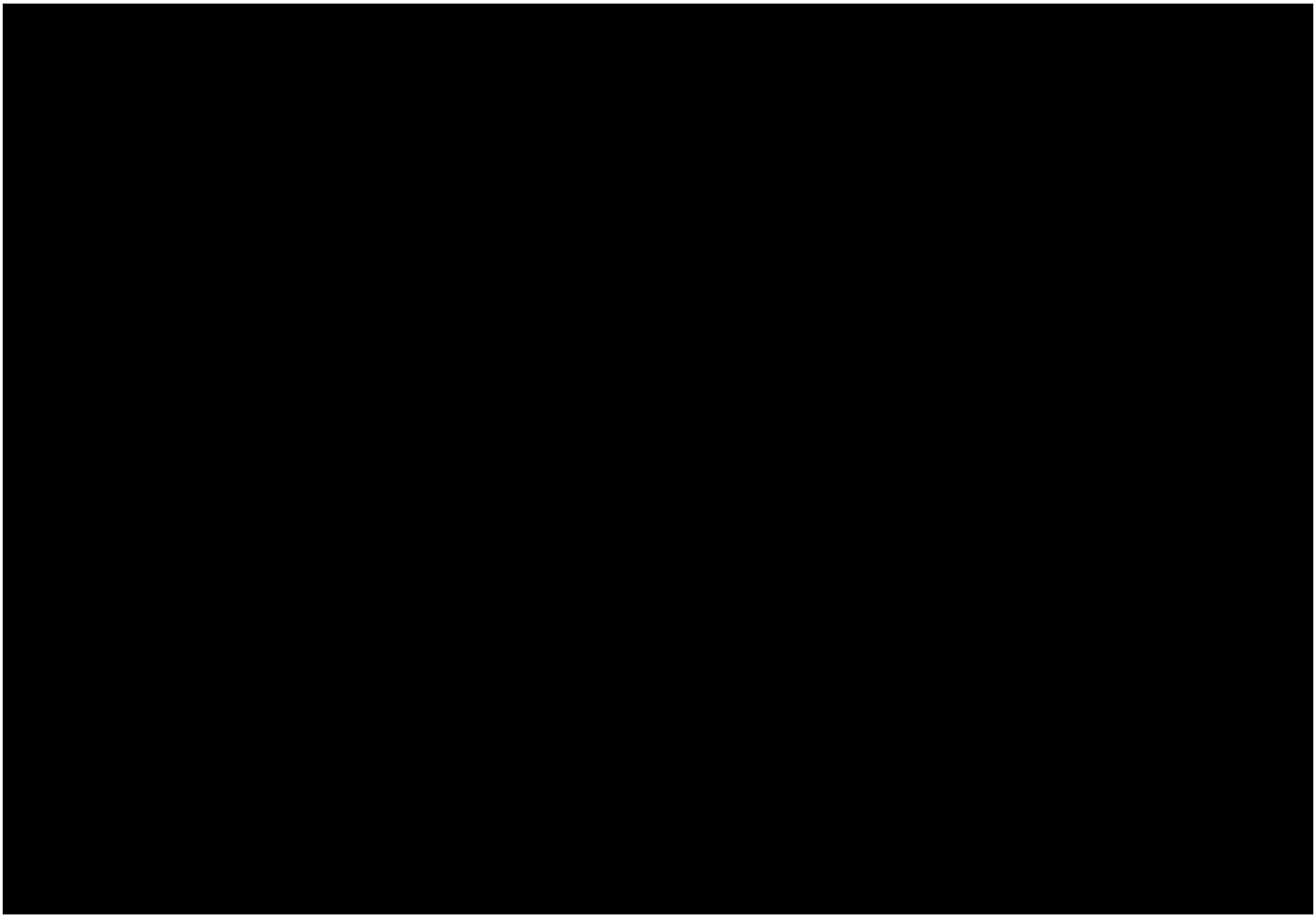
13) MATCHING (1 PT)

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.

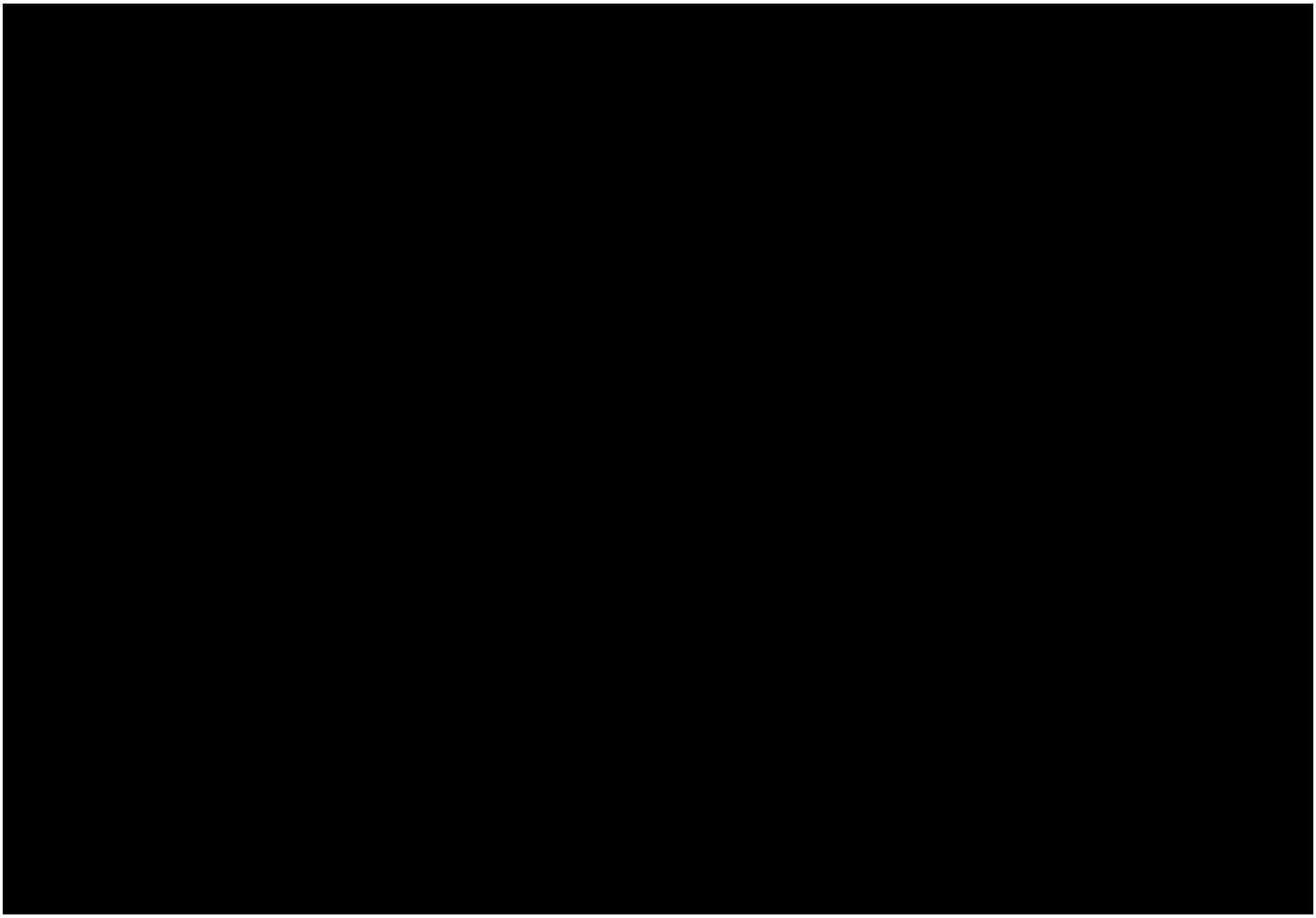


14) MCQ (1 PT)

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.

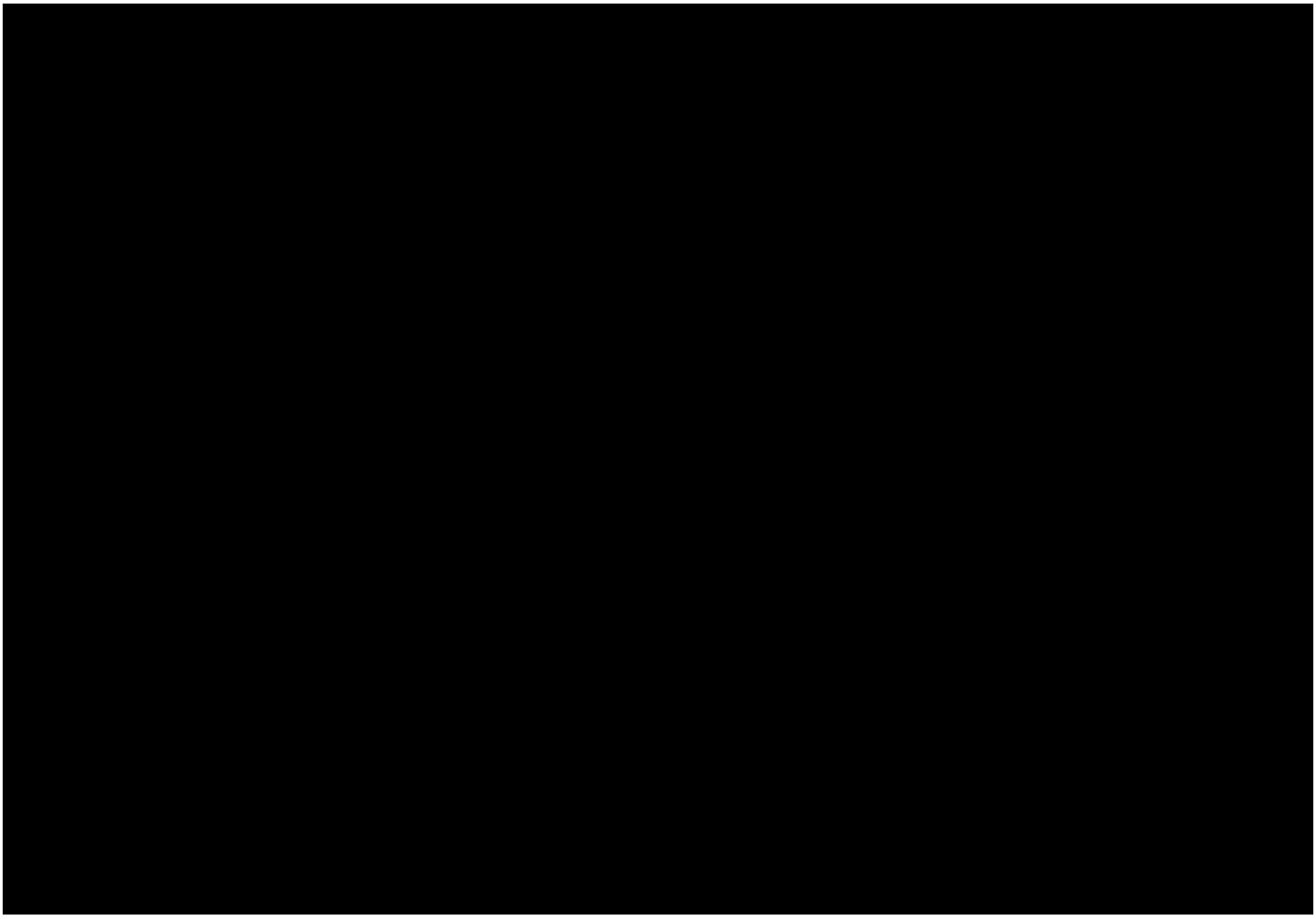


15) MULTIPLE ANSWERS (1 PT)

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.

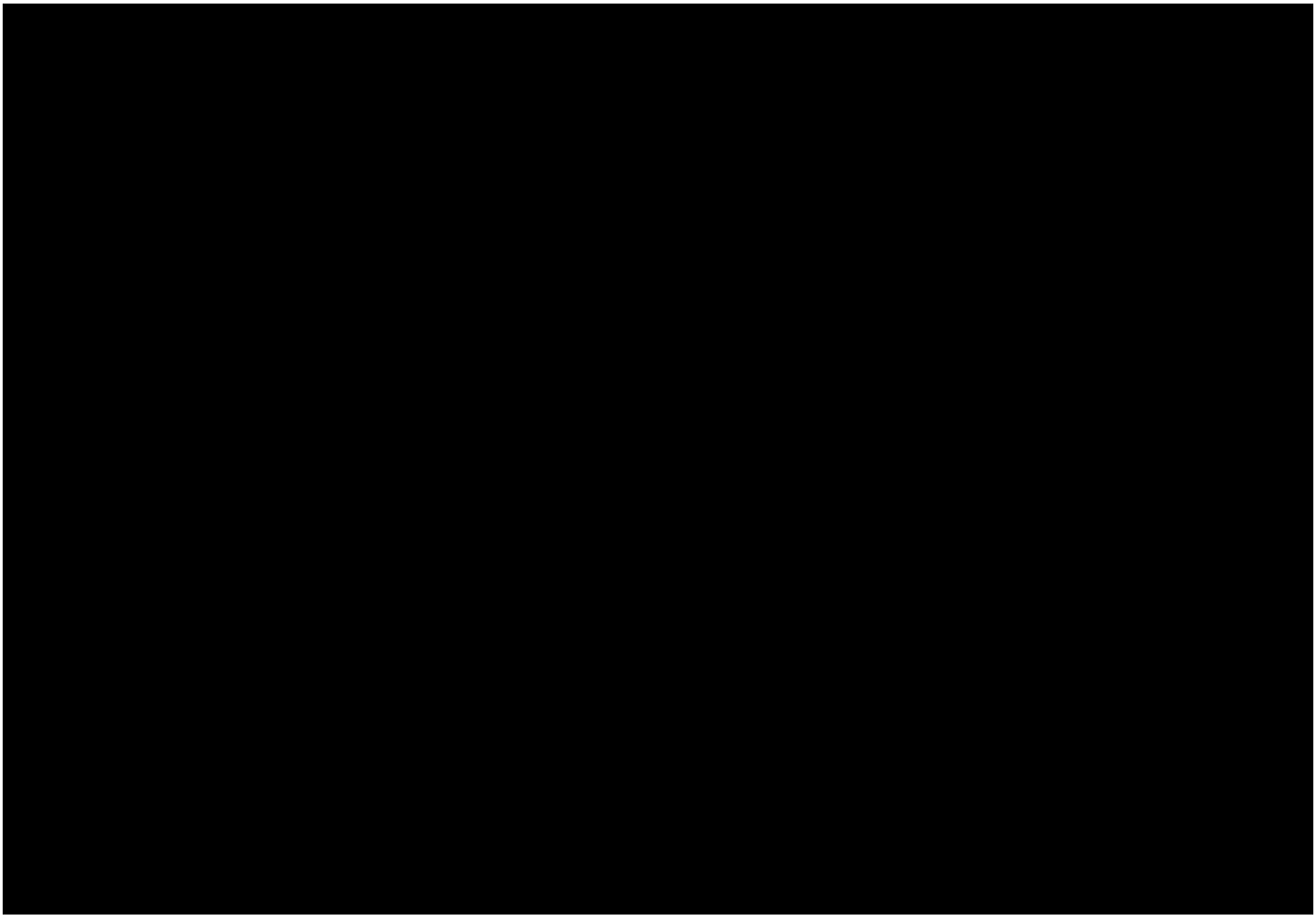
Answer: A, B, D.



16) 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:

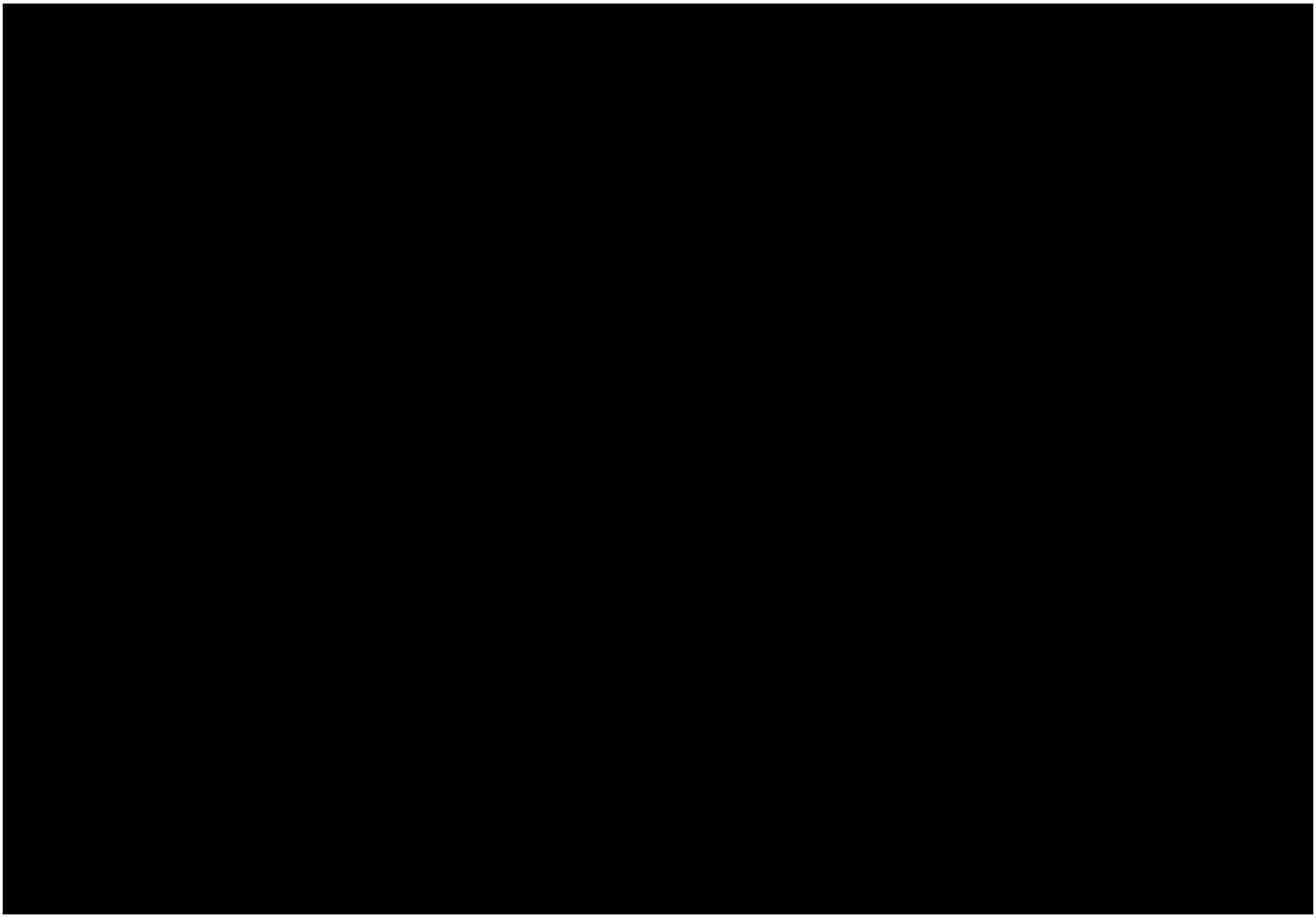


17) MCQ (1 PT)

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.



18) 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.