DATA101 Comprehensive Long Quiz - Set A

50-Point Assessment Document

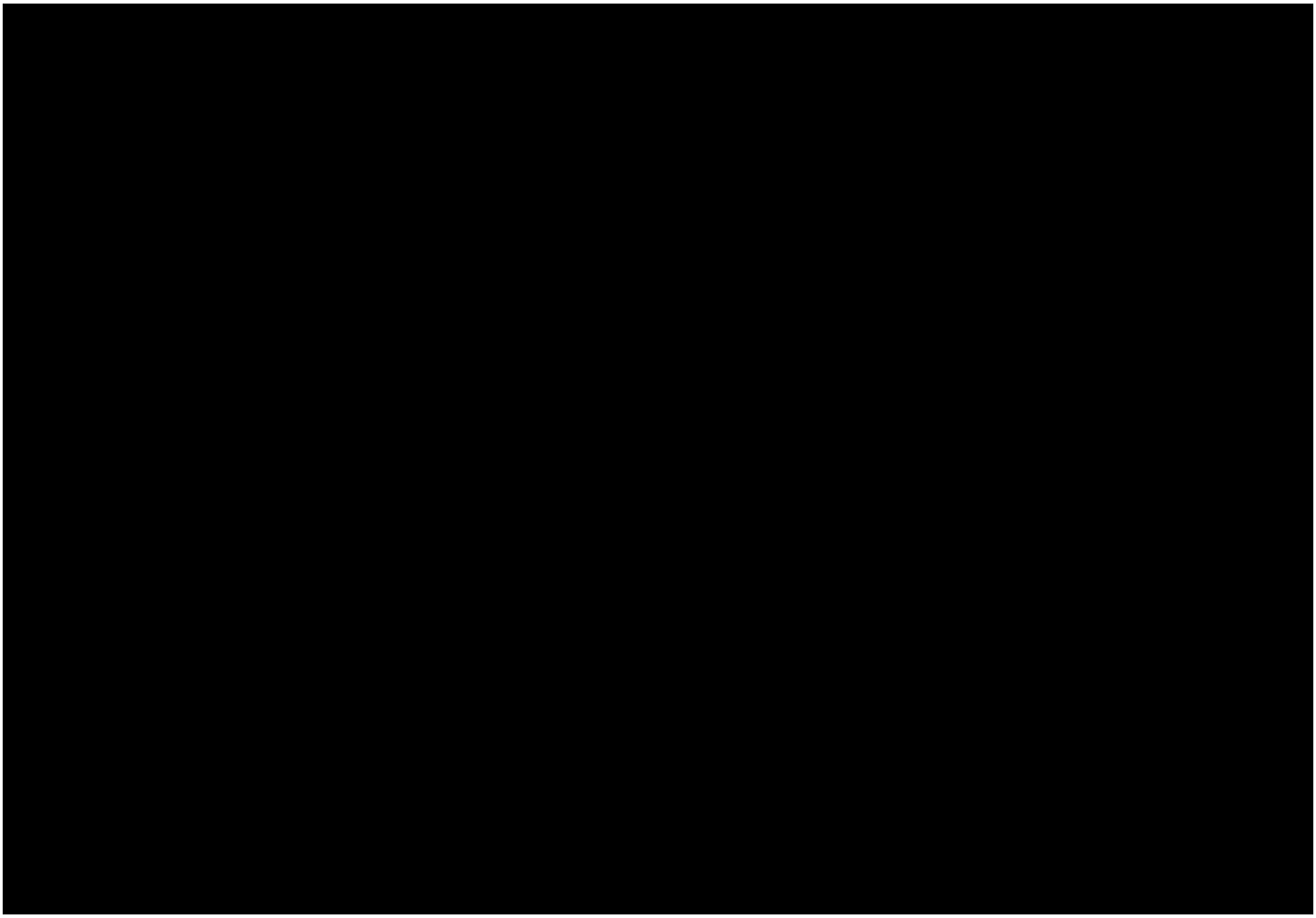
DATA 101: Data Visualization

DE LA SALLE UNIVERSITY

Long Quiz (50 points)

Name: _____ ID: _____ Date: _____

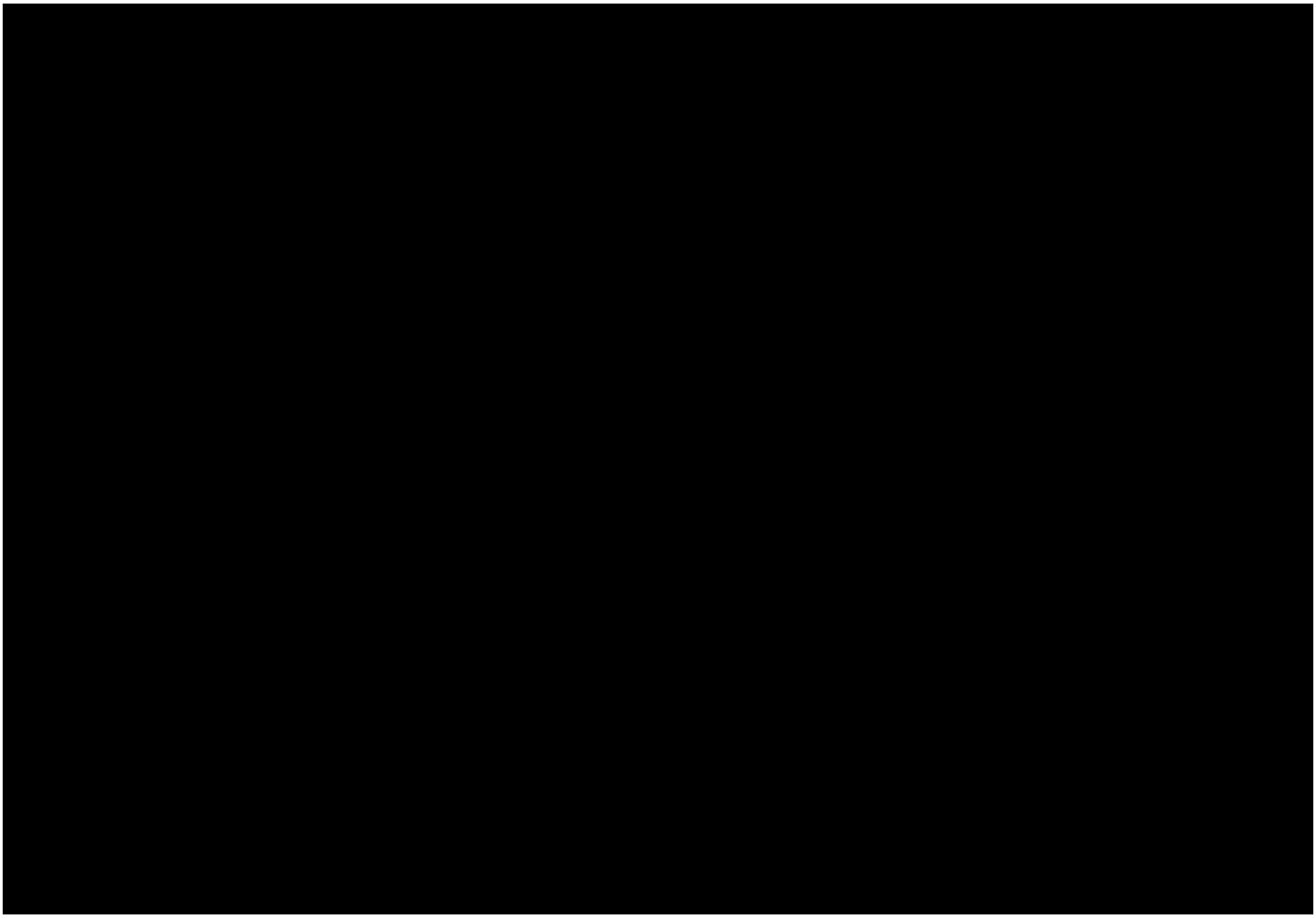
Instructions: Complete all questions. Use only one answer per matching item. Keep responses legible.



1) 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.



2) 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.

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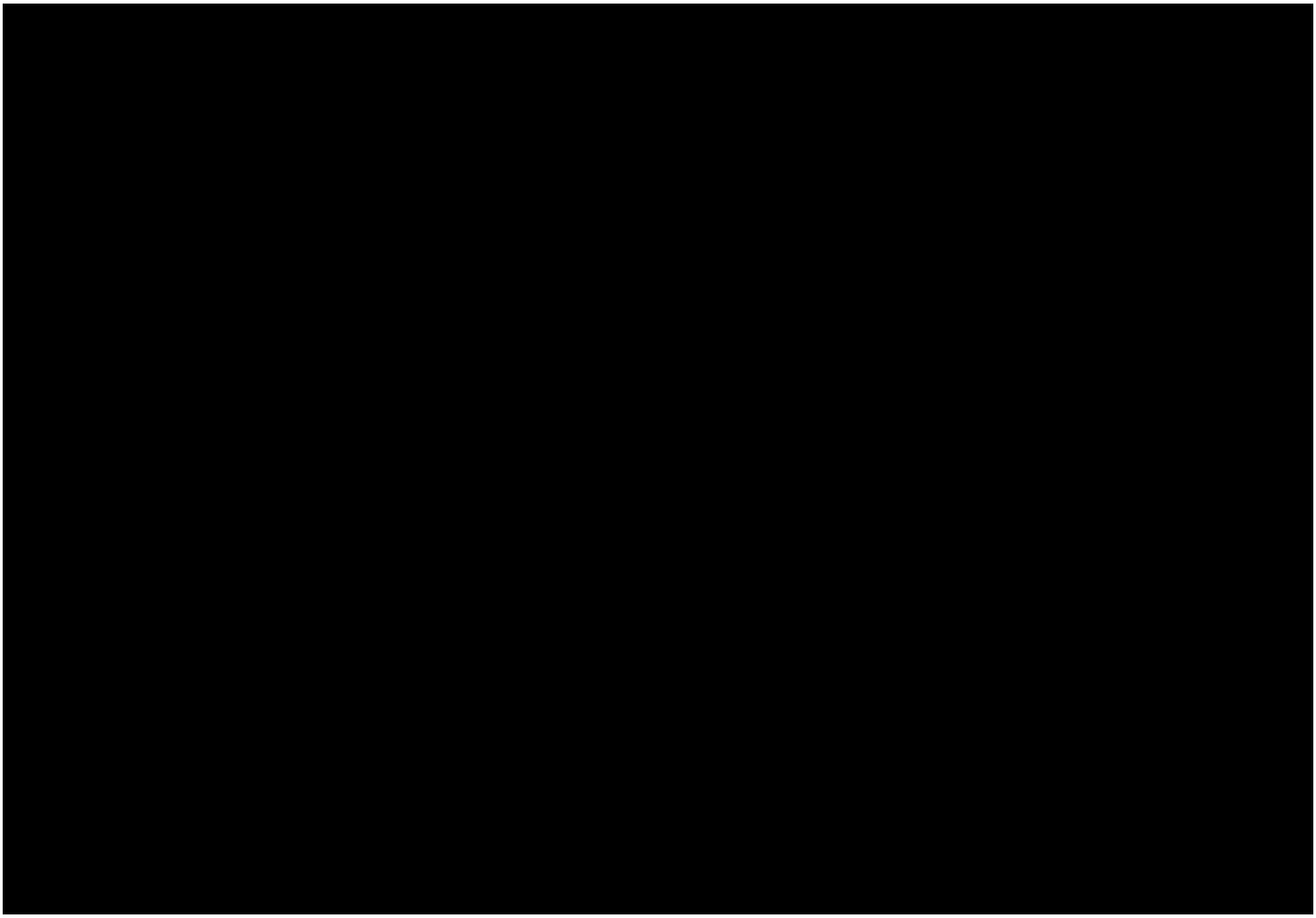

3) MULTIPLE ANSWERS (2 PTS)

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.

A)
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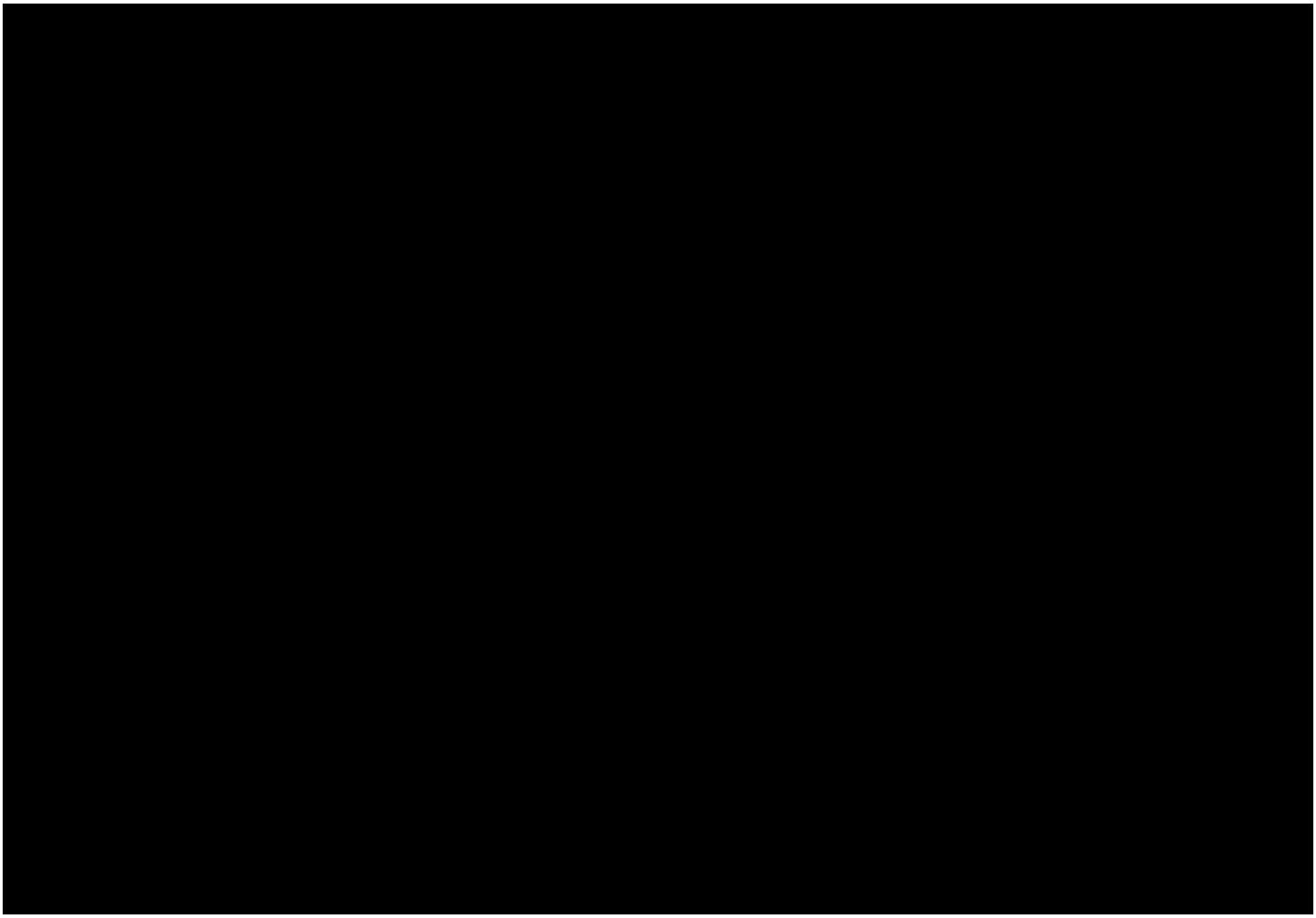

4) RANKING (2 PTS)

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.

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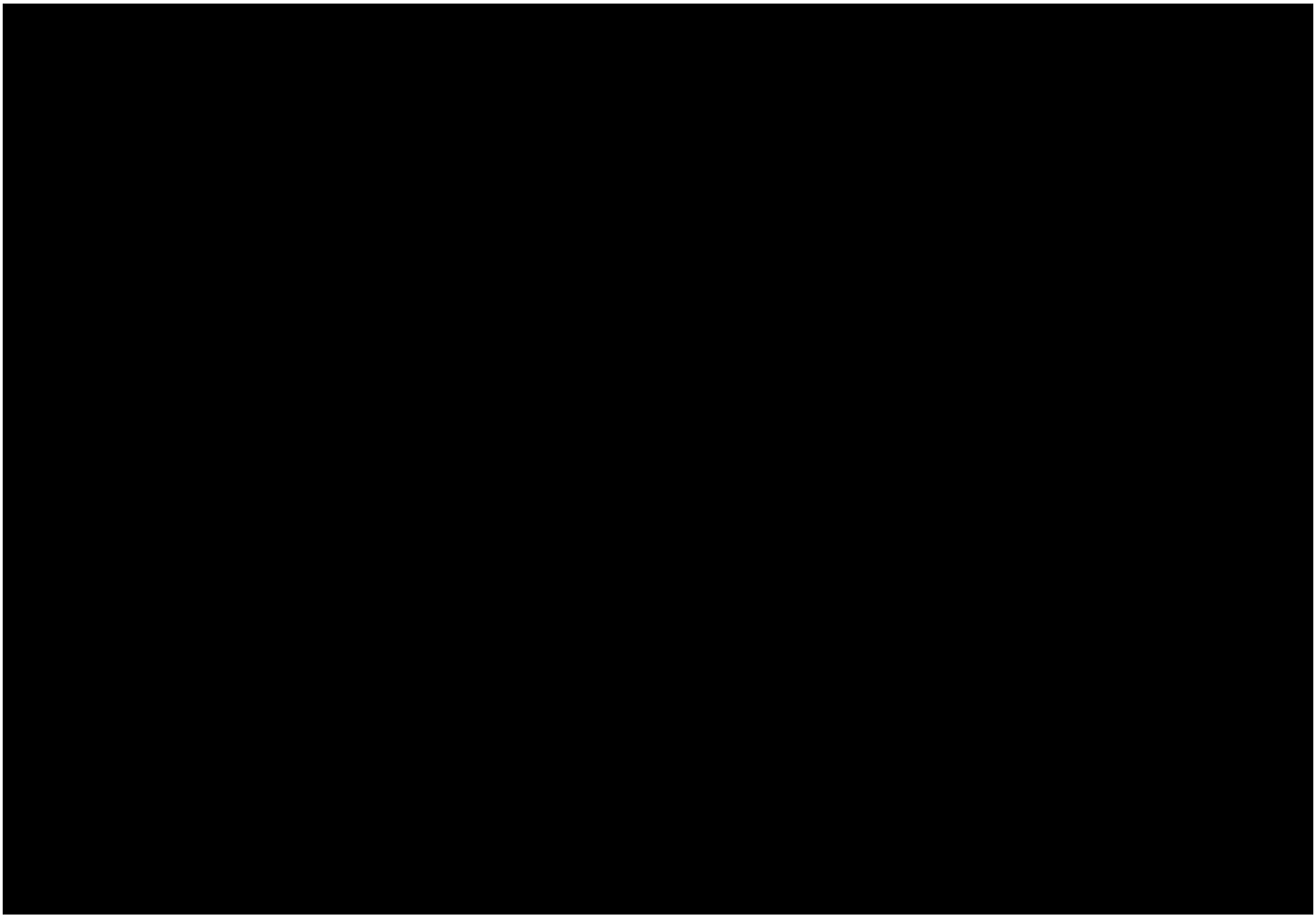
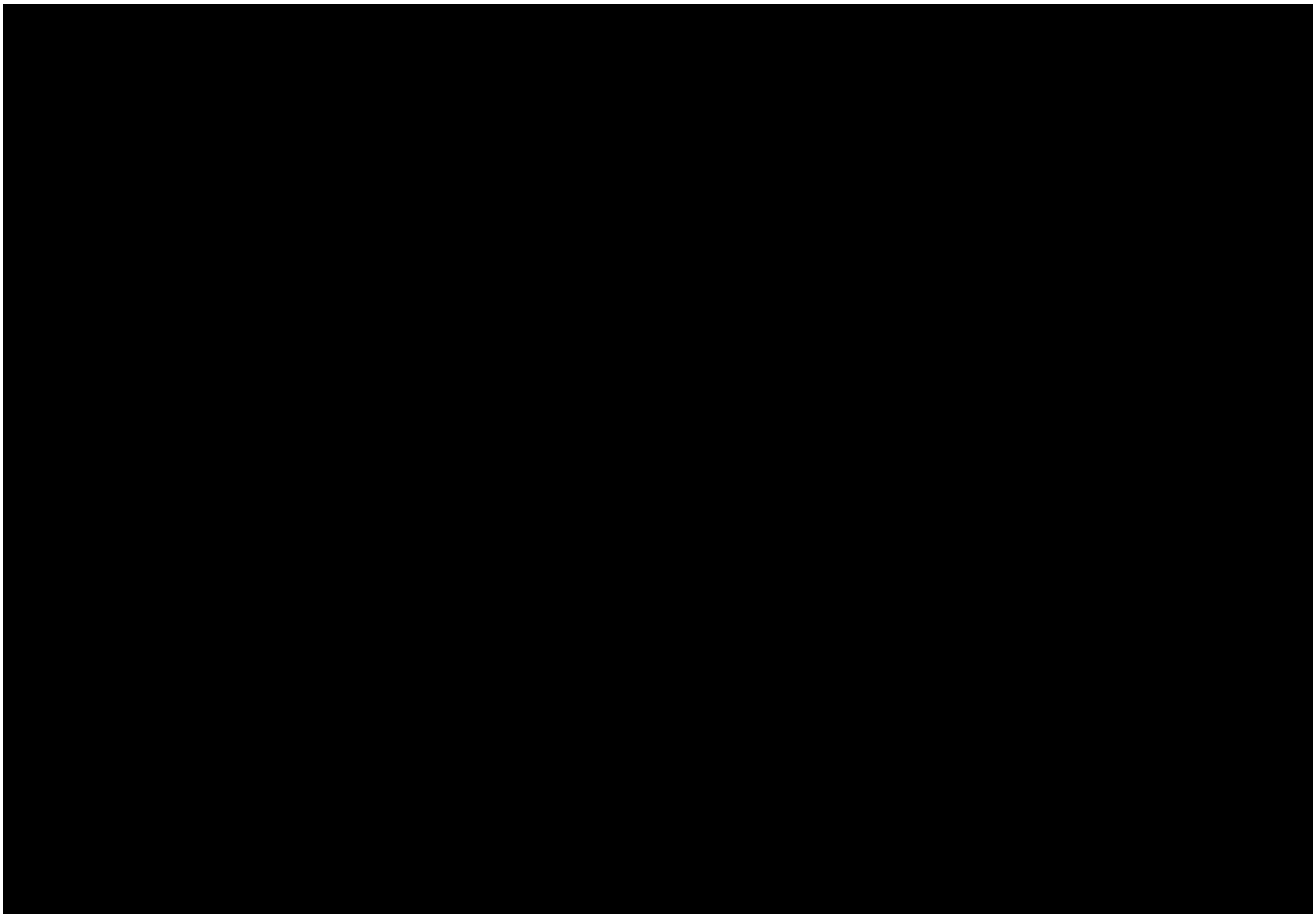


5) SHORT ANSWER (2 PTS)

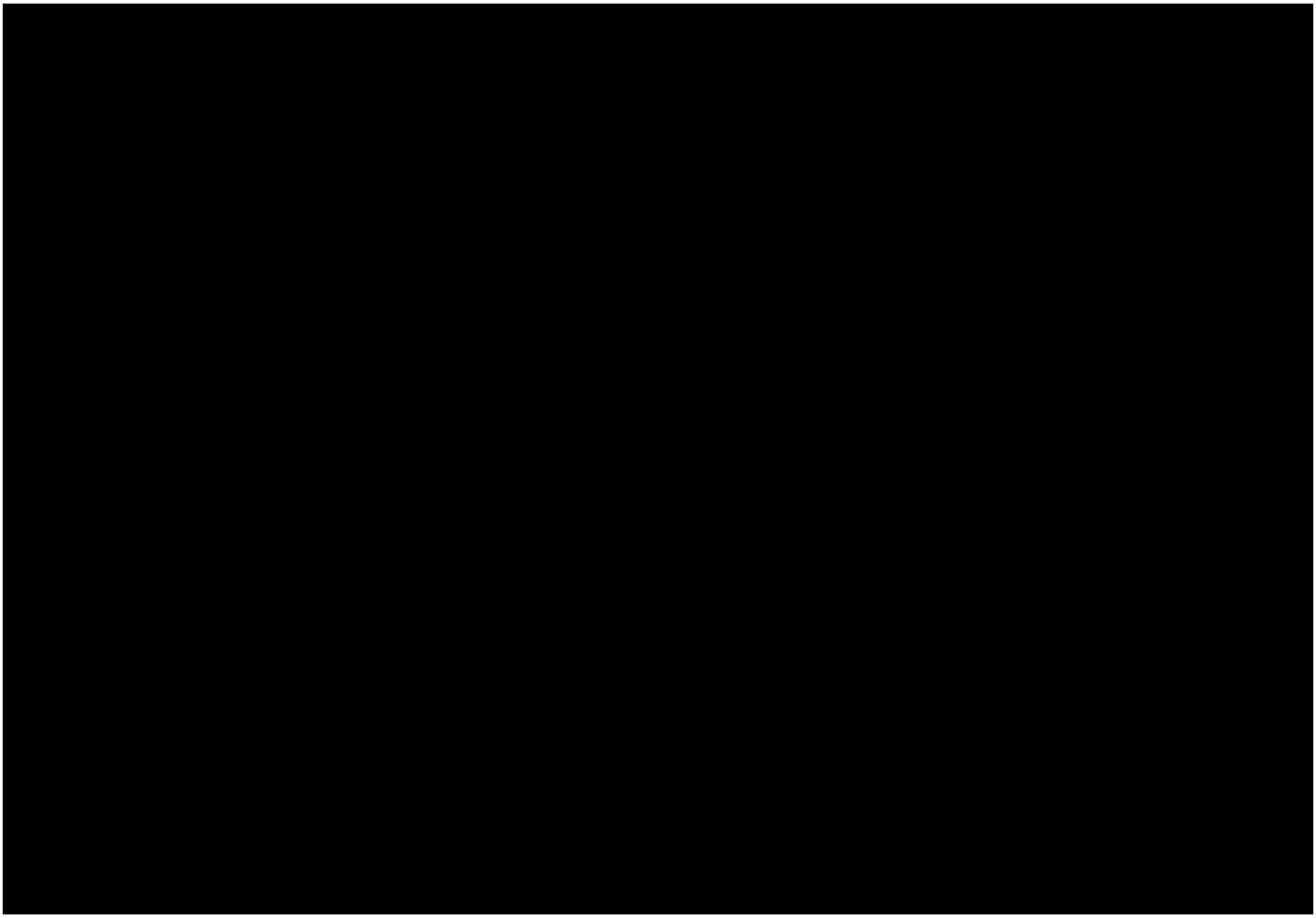
Rewrite this vague request into a defensible task statement template: "Compare city pe
anomalies in monthly support fulfillment."



6) 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



7) 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.
- C) Use direct labels where possible instead of dense legend hunting.
- D) Add six new decorative icons for storytelling emphasis.
- E) Group related marks with proximity and shared space.

A)
B)
C)
D)
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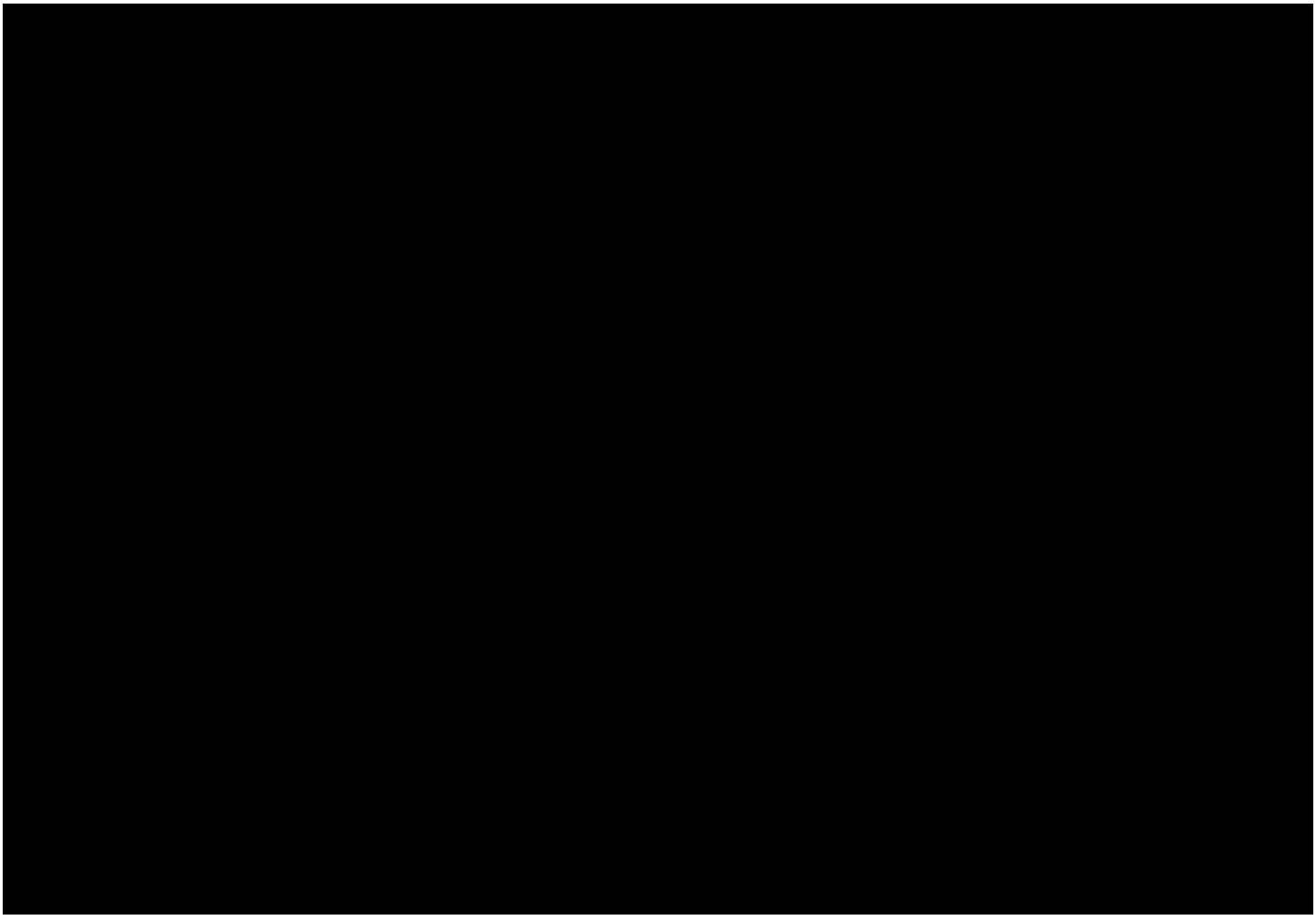
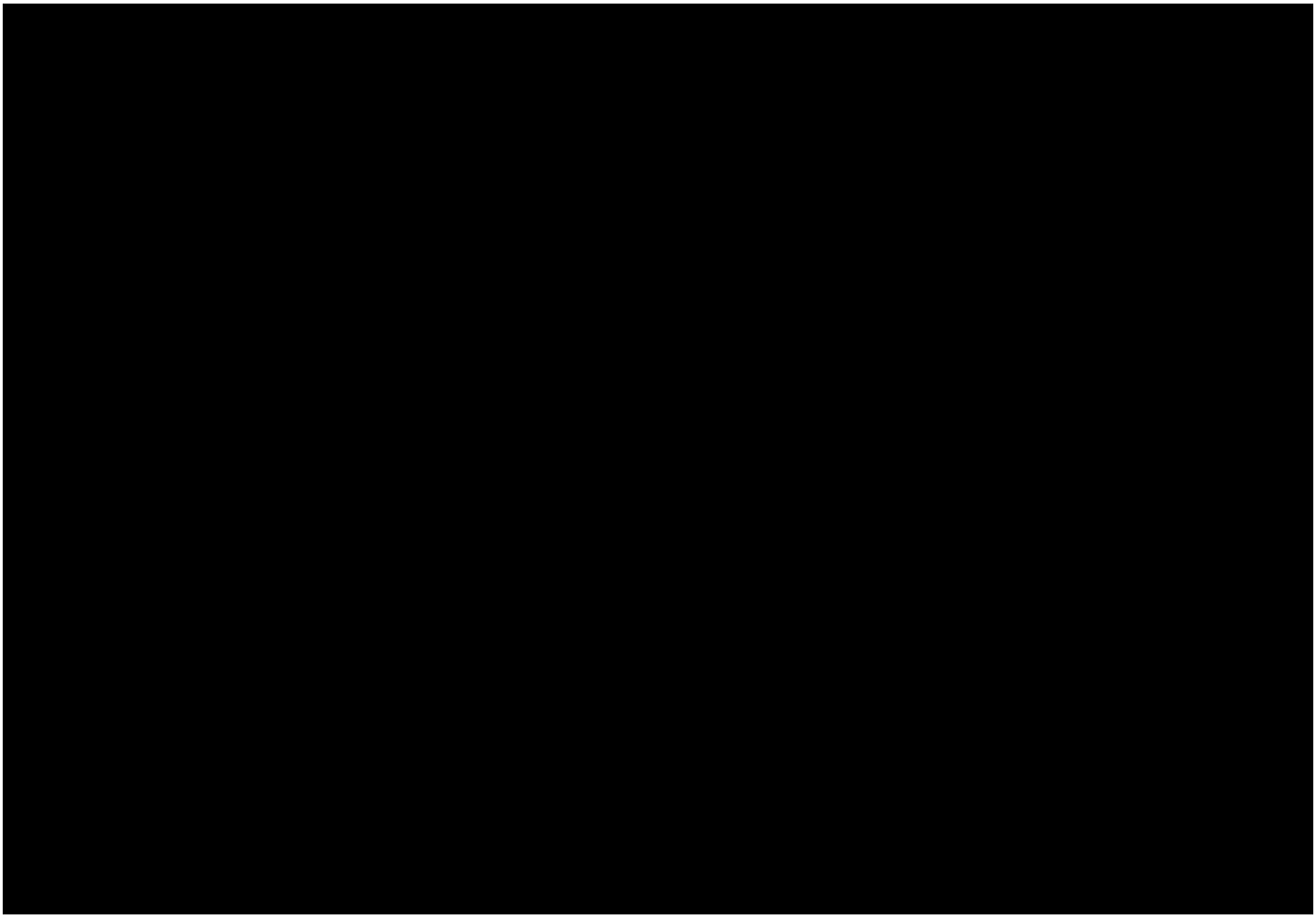


8) MCQ (2 PTS)

A chart displays a diverging political preference with a meaningful midpoint near zero. W
correct?

- A) Qualitative palette.
- B) Sequential low-to-high palette.
- C) Diverging palette anchored at midpoint.
- D) Binary red/green pair for all classes.



9) RANKING (1 PT)

Order the perceptual pitfalls from highest to lowest impact on trust in a report:

Truncated y-axis, 2) inconsistent unit labels, 3) rainbow color ramp, 4) tiny legend.

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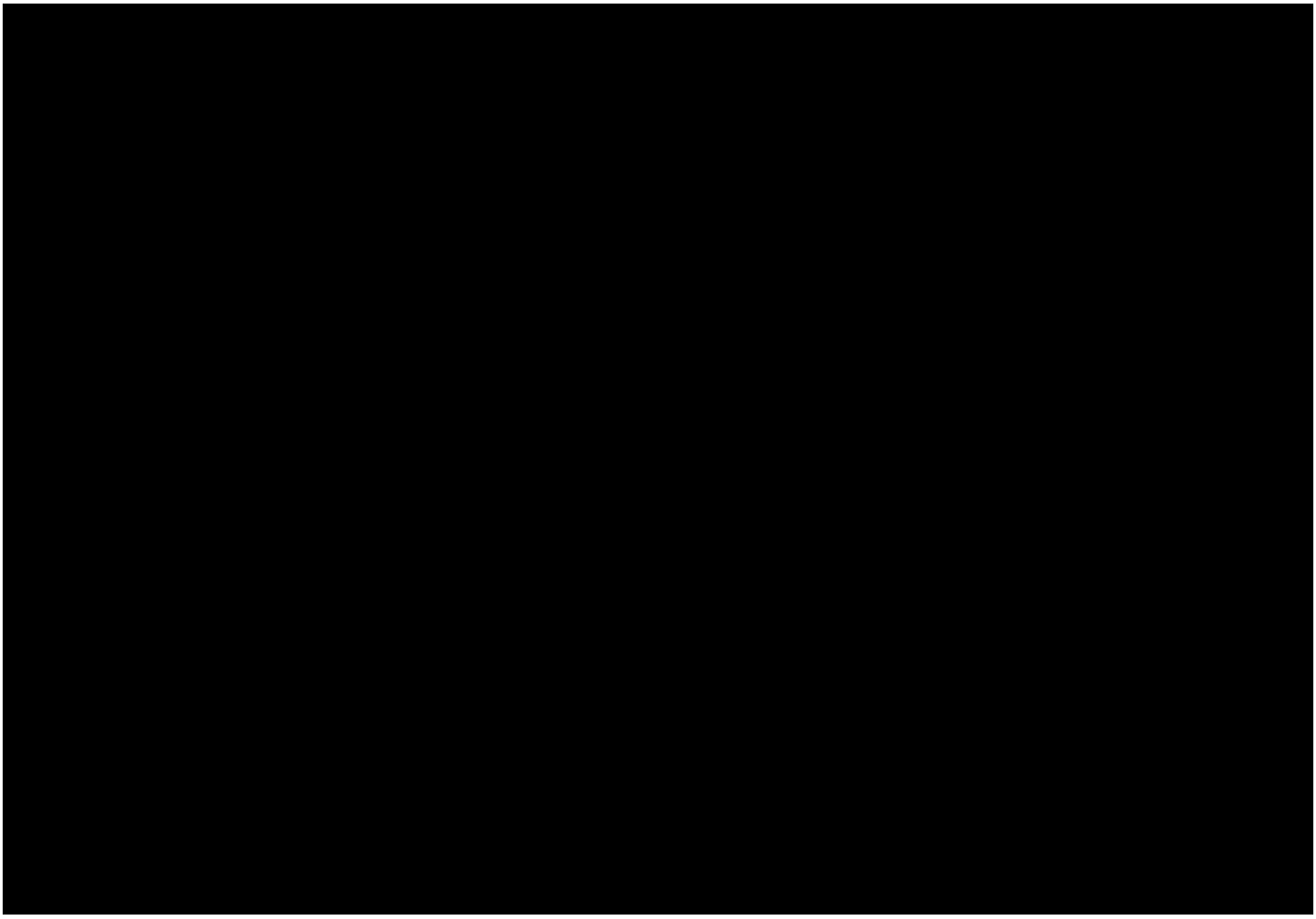
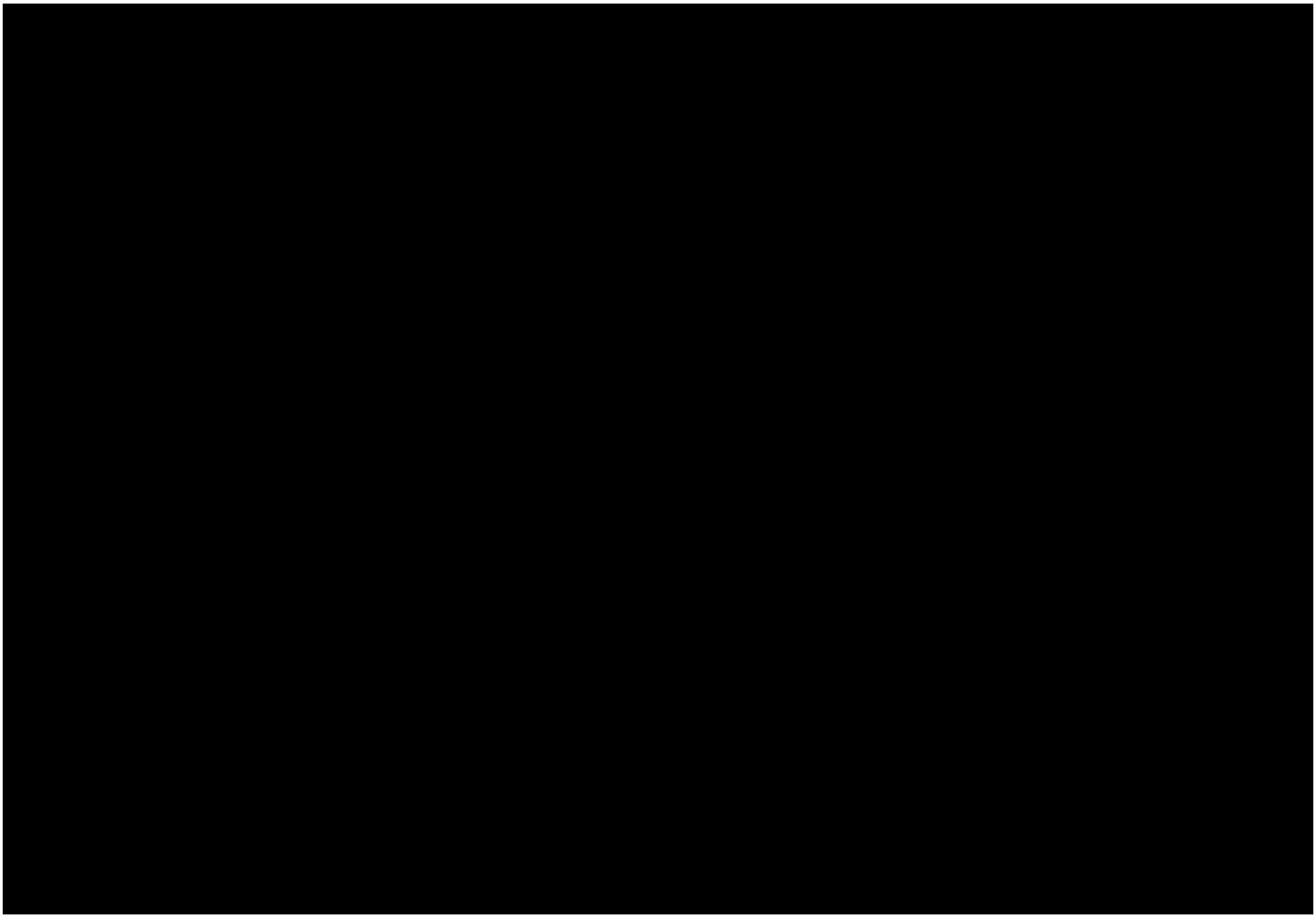


10) SHORT ANSWER (1 PT)

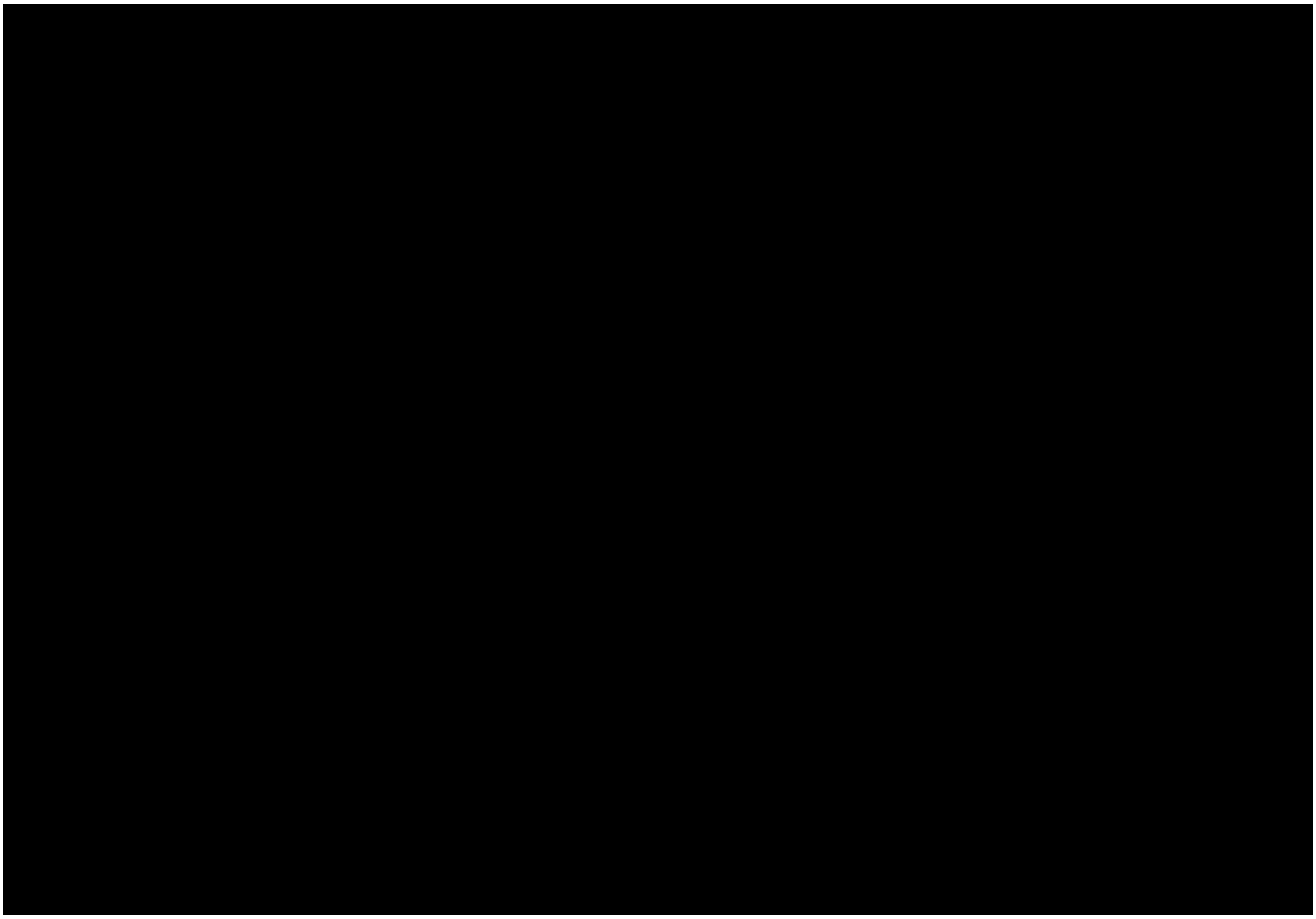
List one reliability check for color interpretation in a map/chart report.



11) MCQ (2 PTS)

You have 6 groups across 24 months with irregular missing dates and campaign interv who improved most and who regressed fastest. Best approach?

- A) Single multi-line with all series and arbitrary interpolation.
- B) Slope or indexed mini-trend comparison after harmonized time grid and normaliz
- C) Two pie charts: before and after.
- D) Boxplot per month and ignore campaign dates.



12) MULTIPLE ANSWERS (2 PTS)

For distribution comparison across groups, select all valid methods.

- A) Match binning strategy across groups before first-pass visual claims.
- B) Use median-only charts when tails are central to interpretation.
- C) Report n and scale choices in interpretation notes.
- D) Prefer violin over histogram by default for small n.
- E) Use log or Box-Cox transforms when skew is severe and interpretation remains d

A)
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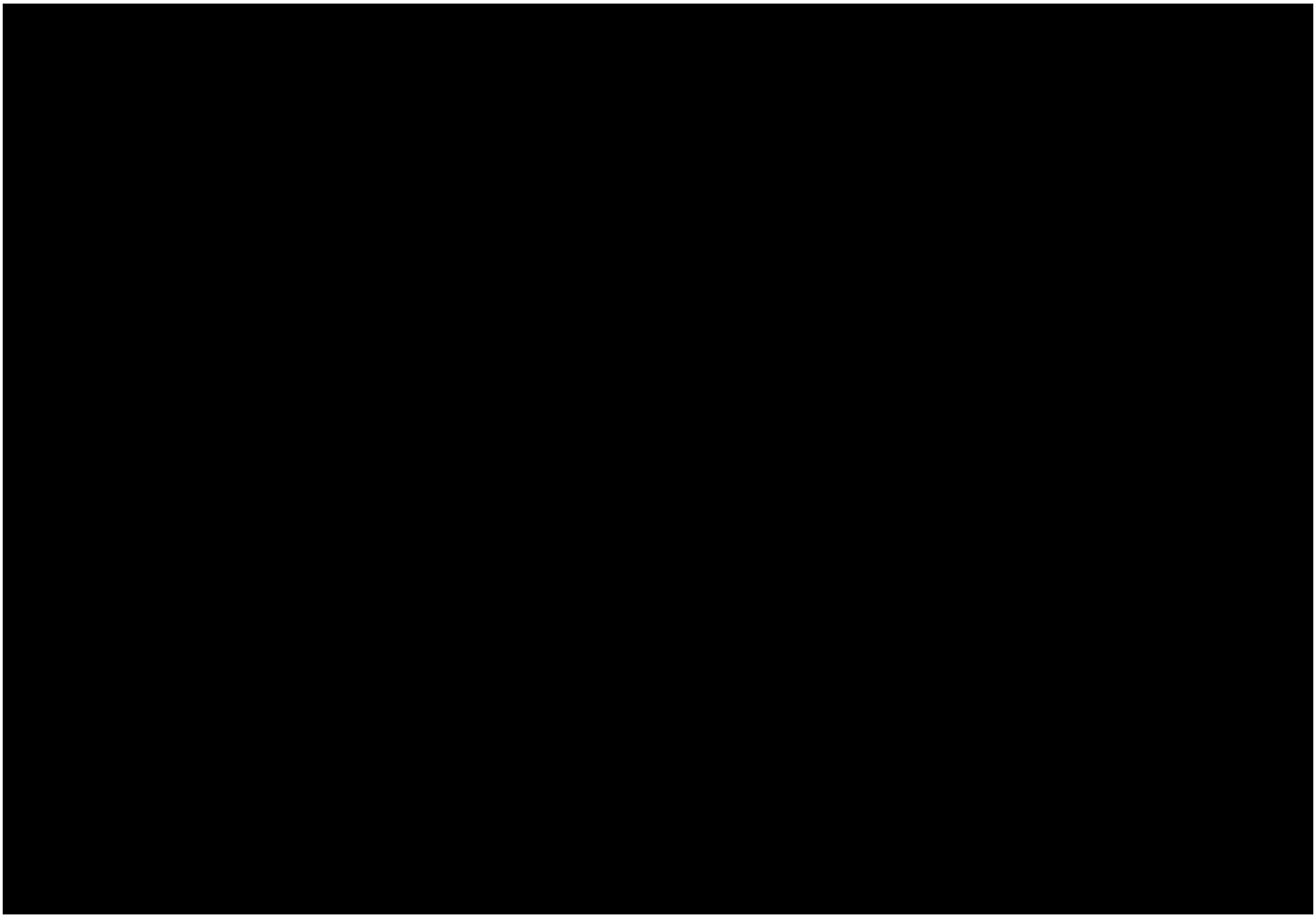

13) MATCHING (1 PT)

Match each goal to the first table-based view choice.

- Detect group medians and trend shifts over time.
- Detect heavy-tailed spread shifts.
- Detect rank changes only for top 5 entities.

- i) Small multiples + trend/quantile panel.
- ii) Distribution glyph (violin/box with CI or whiskers).
- iii) Focused slope/ranker chart after top-k filtering.

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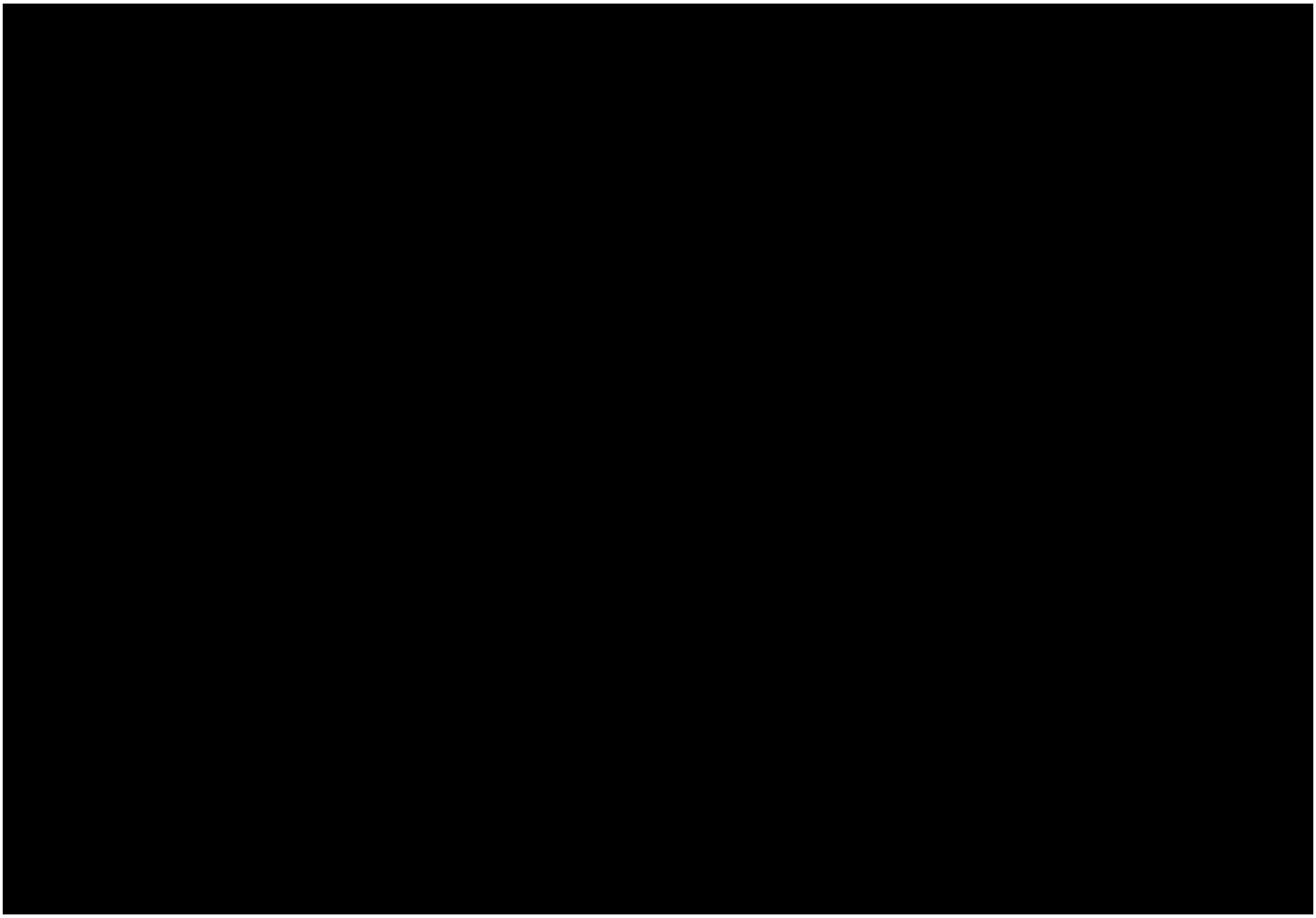
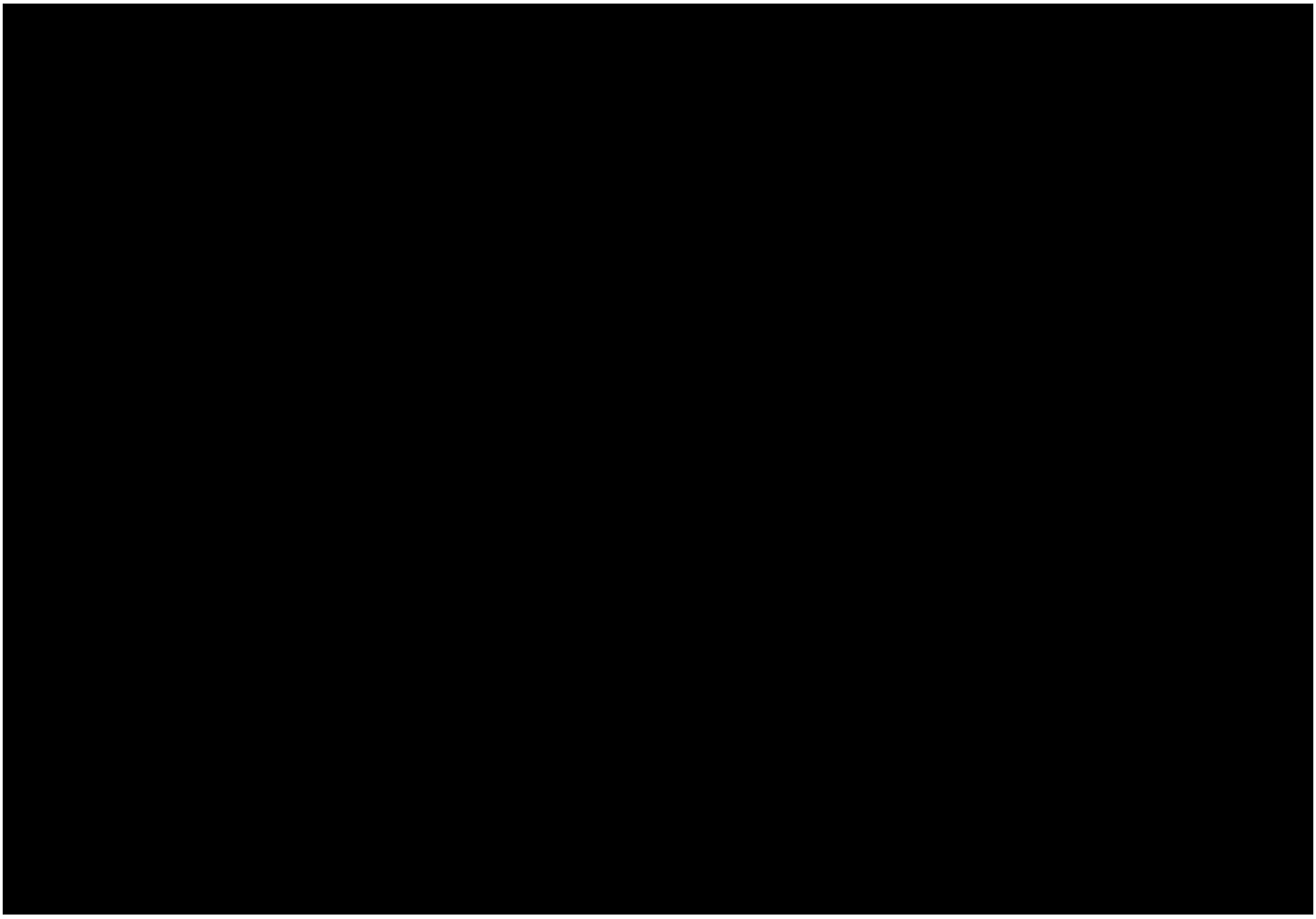


14) SHORT ANSWER (2 PTS)

A stakeholder asks for "fastest changing cohorts" using a dataset with huge within-grc
single preprocessing guard should precede your chart choice?



15) RANKING (1 PT)

Rank these tasks by the degree of information loss if forced into a single chart from mo

- A) Compare two cohorts’ medians by month.
- B) Show outlier bursts for each cohort.
- C) Compare within-cohort variance and spread change.
- D) Identify the fastest-growing and fastest-declining entities.

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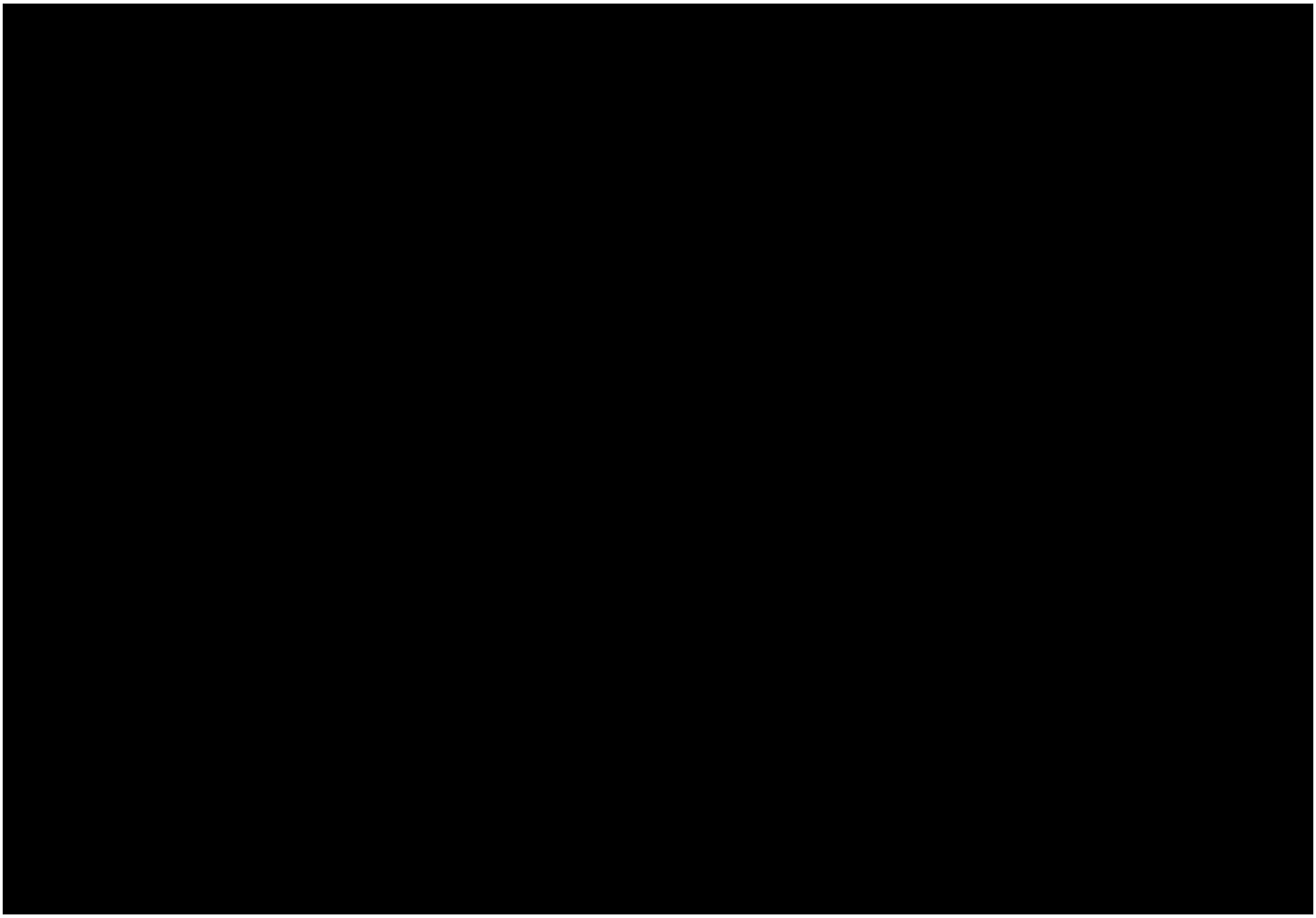
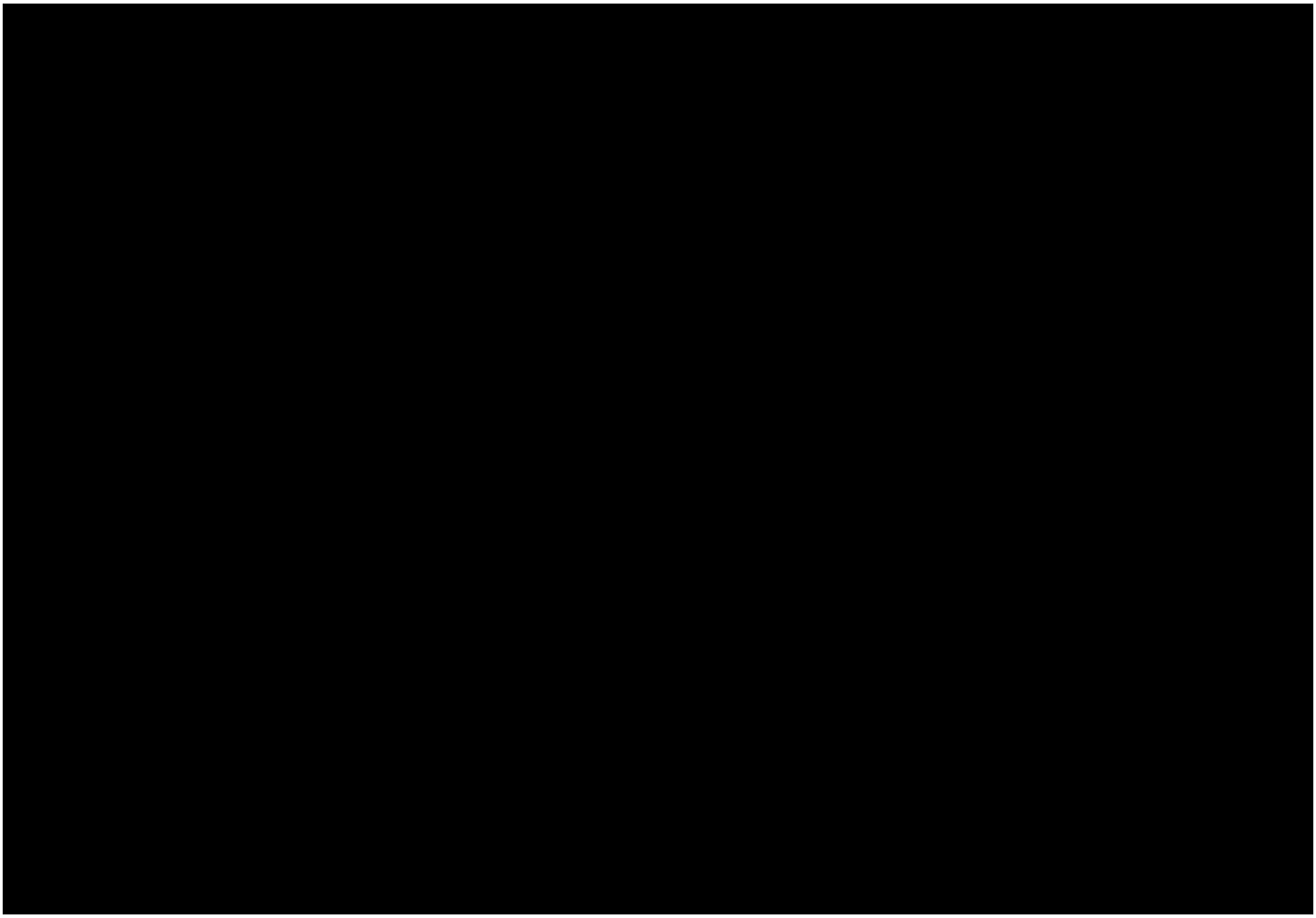


16) MCQ (2 PTS)

An ops room needs shared state and role-specific views. Best first-pass composition?

- A) Duplicate full dashboard for each role.
- B) Keep only one global chart with all controls open.
- C) Overview strip + diagnostic modules + action lane, with progressive disclosure.
- D) Separate pages and no shared interactions.



17) MULTIPLE ANSWERS (1 PT)

Which changes reduce dashboard ambiguity?

- A) Centralized scale registry for metric semantics.
- B) One state store shared across coordinated views.
- C) Hide infrequent actions under advanced controls.
- D) Separate unrelated filters per view by default.
- E) Reuse a single tooltip format across every module.

A)
B)
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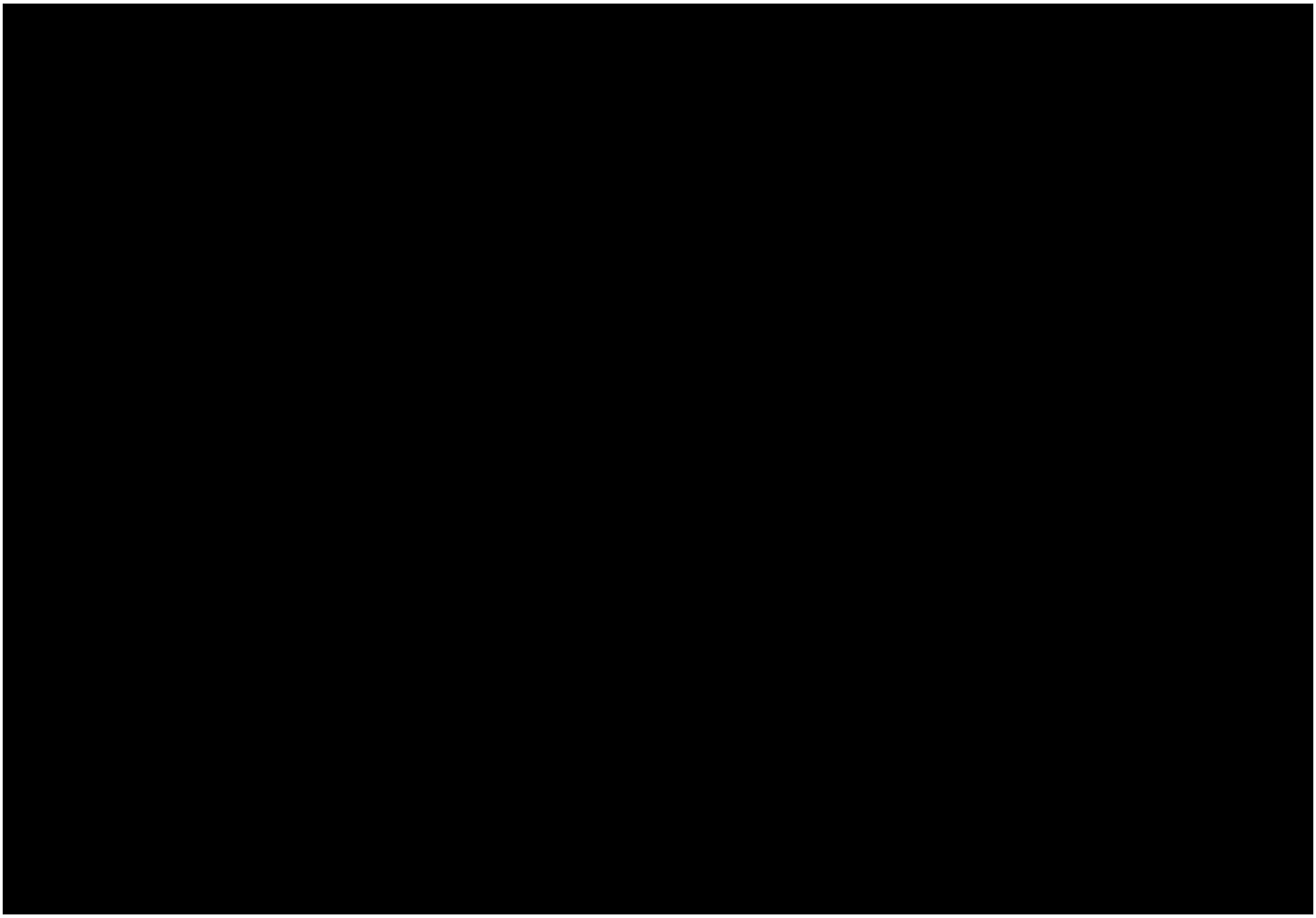

18) MATCHING (1 PT)

Match each pattern to intended outcome.

- Overview then decision lanes.
- Hide/show controls by intent.