30 Data Visualization Practice Questions

Notes for SHS • Data Science • Topic 82 • All research examples are fictional

Question 1 — Define visualization

What is data visualization?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 2 — Categorical type

Classify DeviceType in the profiles.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 3 — Numerical type

Classify WeeklyStudyHours.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 4 — Compare categories

Which graph compares 120, 72 and 48 students?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 5 — Trend over time

Which graph best communicates sessions over 12 weeks?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 6 — Identify histogram

Which chart groups score observations into numeric bins?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 7 — Scatter plot

What does a scatter plot use for its two axes?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 8 — Pie vs bar

When might a pie show Level A/B/C shares?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 9 — Chart axes

What do the x and y axes represent in the score scatter?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 10 — Chart title

Improve “Student Data” for the three-level count chart.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 11 — Bar-chart comparison

Which level contains the most student profiles and by how many more than C?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 12 — Percentages

Compute the shares for levels A, B and C.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 13 — Weekly line

Name the first and last weekly event totals.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 14 — Nonmonotonic four months

For visits 120,150,135,195, is the trend increasing every month?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 15 — Histogram bins

Place eight scores 60,65,70,70,75,80,85,95 into bins [60,70), [70,80), [80,90), [90,100).

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 16 — Box-plot interpretation

What information is contained in a standard box plot?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 17 — Choosing scatter

Which chart reveals a possible hours-score relationship?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 18 — 100% stacked bar

What does it show for different levels?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 19 — Heatmap values

What does a resource-type-by-subject heatmap color represent?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 20 — Counts and rates

Is 720 learning events equal to 720 active students?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 21 — Truncated bar

Why should student-count bars normally start at zero?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 22 — Inappropriate pie

A survey permits selecting multiple preferred resources. Can the selections be exclusive pie slices?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 23 — Dual-axis risk

How can dual y-axes mislead?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 24 — Accessible colors

What prevents reliance solely on red and green?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 25 — Alt text

Write chart alt text for 120/72/48 students.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 26 — Aggregation error

Why is counting all joined profile-event rows a bad way to find students?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 27 — Causality warning

If scatter points slope upward, are extra study hours proven to raise scores?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 28 — Uncertainty display

Which chart feature can show justified mean-estimate uncertainty?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 29 — Debug a chart

A graph of weekly activity sorts dates as text and omits the zero-activity weeks. What should be fixed?

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.

Question 30 — Four-chart story

Choose a four-chart story for the generated 240 profiles and 720 activities.

Answer on a separate sheet; explain your chart choice, unit and denominator where applicable.