

HINTS & COMMON PITFALLS

IAo2

1. Variance & Standard Deviation

- a) **Variance cannot be negative.** If you see “Variance = -2 ” in a question option, that’s automatically invalid.
- b) Standard deviation = square root of variance → always reported as a **positive number**.

2. Scales of Measurement

- a) **Nominal** = categories without order (e.g., Zip code, Gender).
- b) **Ordinal** = ordered categories (e.g., Top 10%, Middle 50%, Bottom 40%).
- c) **Interval Scale**
 - Has meaningful differences (you can add/subtract).
 - No true zero → zero does not mean “nothing.”
 - Example:
 - o Temperature $^{\circ}\text{C}$ → 0°C doesn’t mean “no temperature,” it’s just a point on the scale.
 - o Year built → 0 AD doesn’t mean “no year,” it’s just where the calendar starts.

d) Ratio Scale

- Has meaningful differences (you can add/subtract).
- Has a true zero → zero means nothing exists.
- You can also make ratios (twice as much, half as much).
- Example:
 - Age → 0 years = not alive.
 - SQFT → 0 sqft = no space.
 - Price → \$0 = free.
 - Bath count → 0 = no bathroom.

3. Using JASP & Excel

- a) Always **copy values exactly** from JASP outputs. Do not round manually unless instructions say so.
- b) In Excel/Google Sheets: **round to 3 decimal places** consistently.
- c) When asked for smallest or largest Z-score → use may use inbuilt function in JASP, then check min/max.

- d) When asked about number of records with $Z > 3 \rightarrow$ apply a filter/condition (`=COUNTIF (range,">3")`).

4. General Tips

- a) Read carefully whether the question asks for **probability**, **proportion**, or **percentage**.
- b) Double-check that your answers match the **requested format** (decimal, 3 decimals, no % sign).
- c) Watch out for **trick options** (e.g., negative variance, SD with $\pm$ sign).
- d) For transformations (like adding 5 to every value): **variance doesn't change** (since spread is the same).