

Answers to Inference Review Questions

A key organizing principle is to focus on the individual observations and whether they are categorical or quantitative.

- individual observations:** Categorical (Which News Source? and Which Nationality?)
inference procedure: Homogeneity
statistic: χ^2
degrees of freedom: $(4 - 1)(2 - 1) = 3$.
- individual observations:** Categorical (Cheated or Not?)
inference procedure: One Sample Proportion
statistic: Z
degrees of freedom: not applicable.
- individual observations:** Quantitative (Amount of Tar for a regular cigarette, or for a low tar one.)
inference procedure: Two Sample Mean
statistic: t
degrees of freedom: $(15 - 1) = 14$ for hand computation.
- individual observations:** Quantitative (for one child, the Number of Cookies, and the Hyperactivity Score.)
inference procedure: Regression Slope
statistic: t
degrees of freedom: $9 - 2 = 7$
- individual observations:** Quantitative (Tip on One receipt.)
inference procedure: One Sample Mean
statistic: t
degrees of freedom: $20 - 1 = 19$

6. **individual observations:** Categorical (Blood Type of an Individual.)
inference procedure: Goodness of Fit
statistic: χ^2
degrees of freedom: $4 - 1 = 3$
7. **individual observations:** Quantitative (for one team, its Home Points Total, and its Away Points Total.)
inference procedure: Matched Pairs
statistic: t
degrees of freedom: $32 - 1 = 31$
8. **individual observations:** Categorical (Ticketed or Not? and Man or Woman?)
inference procedure: Two Sample Proportion
statistic: Z
degrees of freedom: not applicable
Remark: Every two sided two sample proportion test can also be done as a $2 \times 2 \chi^2$ test.
9. **individual observations:** Categorical (Attitude Towards Cloning and Education Level.)
inference procedure: Independence
statistic: χ^2
degrees of freedom: $(4 - 1)(3 - 1) = 6$