

Math 138: Statistics

Quiz #1 Topics

Chapters 1–9.

- Chapter 2: Distinguishing between cases and variables, and between categorical and quantitative variables.

Practice problems: 13 (Weighing bears), 17 (Babies), 19 (Herbal medicine)

- Chapter 3: Displaying categorical data. Interpreting and creating bar charts, pie charts, segmented and clustered bar charts, frequency tables, and contingency tables. Recognizing errors in pie charts and bar charts.

Practice problems: 13 (Oil spills 2008), 15 (Global warming), 29 (Weather forecasts)

- Chapters 4 and 5: Displaying quantitative data. Interpreting and creating histograms and boxplots. Unimodal, symmetric, and skewed distributions, and outliers. Interpreting and estimating the mean, median, standard deviation, and IQR. Calculating the median and IQR. Understanding how summary statistics are effected by outliers, and which should be used with symmetric vs. skewed distributions. Recognizing errors in histograms, boxplots, and summary statistics.

Practice problems: Chapter 4: 5 (Thinking about shape), 7 (Sugar in cereals), 11 (Heart attack stays), 17 (Mistake), 23 (Pizza prices again), 41 (A-Rod again), 45 (Final grades),

Chapter 5: 7 (Rock concert accidents), 17 (Marriage age), 25 (Caffeine)

- Chapter 6: The normal distribution: Interpreting and finding z -scores, interpreting and finding percentages of area under the normal curve using the table in the back of the text, the 68-95-99.7 rule.

Practice problems: 11 (Temperatures), 23 (Professors), 25 (Guzzlers)

- Chapter 7: Correlation: Interpreting scatterplots, interpreting and estimating the correlation coefficient, properties of the correlation coefficient. Determining when it's appropriate to find correlation. Picking explanatory and response variables. Recognizing errors in correlation.

Practice problems: 1 (Association), 5 (Scatterplots), 11 (Matching), 13 (Politics), 25 (Height and reading), 27 (Correlation conclusions I), 29 (Baldness and heart disease)

- Chapters 8 and 9: Regression: Interpreting and finding the slope and equation of the regression line. Predicting values in a scatterplot using the regression equation. Interpreting residuals, interpreting R^2 . The phenomenon of regression to the mean. Identifying non-linear relationships. Recognizing errors in regression analysis.

Practice problems: Chapter 8: 3 (More cereal), 5 (Another bowl), 21 (Misinterpretations), 29 (Cigarettes), 33 (Last cigarette)

Chapter 9: 1 (Marriage age), 11 (Unusual points), 19 (Heating)