5A Time Series

Q1. When analyzing a retail store's quarterly sales data, you

identify predictable peaks and troughs recurring every year. The

process by which you remove these recurring intra-year

fluctuations from your time series to analyze underlying behavior is

Variations

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known as:

A. Detrending

B. Deseasonalization

C. Index smoothing
D. Box-Cox transformation

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Z supposes - \leq slack +

8A Linear programming

Q2. In converting a labor availability constraint that reads (240 hours of labor" into the standard equality form for the Simplex method, the positive variable you subtract to model the excess hours is called a(n):

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A. Slack variable

B. Surplus variable C. Artificial variable

- D. Penalty variable

5A Time Series

Q3. In time series analysis, when using a k-period moving average primarily to estimate the trend component, which variations are effectively eliminated from the original series, leaving only the

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st) variations

trend-cycle for further study?

a. Seasonal and irregular

- b. Cyclical and seasonal
- c. Trend and irregular
- d. Irregular only

4)

4A Correlation and Regression

Q4. Consider two variables X and Y that follow a perfect quadratic relationship ($Y = X^2$) across a sample. When computing Pearson's correlation coefficient (r) between X and Y for this data set, the resulting value will likely be closest to:

perfect liveor relationship A. +1 B. 0 muesse relationship С. –1 D. Undefined

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3A, ABM Measures of Central Tendency & Dispersion, Skewness, Kurtosis



6A ABMTheory of Probability Q6. If three events A, B, and C in a random experiment can occur simultaneously (i.e., are not mutually exclusive), which of the following correctly computes the probability that at least one of them occurs? A. P(A) + P(B) + P(C)B. $P(A) + P(B) + P(C) - P(A \cap B) - P(B \cap C) - P(A \cap C)$ C. P(A) + P(B) + P(C) – P(A∩B) – P(B∩C) – P(A∩C) + P(A∩B∩C) R(AUB) = P(A) + (B) - P(A)B) D. P(A \cap B \cap C) PAUBUC) PA)1 P(B)+ P(C) - P(ANB) - P (Anc) - (BAC) + P(AABAC)

2A abm sampling distribution-2

Q7. When drawing a sample without replacement from a finite

population, the finite population correction factor improves

precision. Under which of the following conditions can you safely

omit this correction factor?

A. The population size (N) is less than 30

B. The sample size (n) exceeds 5% of N

C. The sampling fraction (n/N) is less than 0.05

D. The sampling distribution is non-normal

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7A estimation new

Q8. When comparing two unbiased estimators for the same population mean from samples of equal size, which criterion dictates that the preferred estimator is the one with smaller sampling variability?

A. Consistency

B. Unbiasedness



D. Sufficiency

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1A, ABM DEFINITION OF STATISTICS, IMPORTANCE & LIMITATIONS

Q9. At which phase of statistical analysis do researchers

systematically group raw observations into classes and present

them in table form to facilitate overview of large datasets?

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A. Data collection

B. Classification and tabulation

C. Analysis of data

D. Interpretation of data

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5A Time Series

Q10. When a statistician wants to fit a precise trend line to time series data by minimizing the sum of squared deviations of observed values from the trend, the most appropriate method to choose is:

