15 problems based on Descriptive Stats: 30 mins



Introduction to Statistics

1. Problem:

A researcher collects the following data on the heights (in cm) of a sample of five plants:

120, 125, 130, 135, 140 .

Classify the type of data as:

a) Structured b) unstructured

c) Numerical d) categorical

2. Problem:

A survey records the following data for 10 individuals: their age, favorite color, and hours

spent on social media per day.

Identify the types of data for:

a) Age

b) Favorite color

c) Hours spent on social media



Measures of Central Tendency

3. Problem:

Calculate the mean, median, and mode for the dataset:

3, 7, 7, 10, 15, 20 .

4. Problem:

The weights (in kg) of five parcels are: 12, 15, 18, 21, 25 .

Add an outlier weight of 50 . How does this affect the mean and median?



Measures of Dispersion

5. Problem:

Find the range and interquartile range (IQR) for the dataset:

5, 10, 15, 20, 25, 30, 35 .

6. Problem:

A dataset has a standard deviation of . If all values in the dataset are doubled, what is the 5

new standard deviation?

7. Problem:

Calculate the coefficient of variation for a dataset with a mean of 50 and a standard

deviation of .



Correlation and Skewness

8. Problem:

|  |  |  |  |
| --- | --- | --- | --- |
| Two variables, X | and Y | , have a correlation coefficient of 0.85 | . Interpret this value. |

9. Problem:   
A dataset has a positive skew. Which measure of central tendency (mean, median, or mode) is likely the largest?

10. Problem:   
Calculate the Pearson correlation coefficient for the following paired data: X : 1, 2, 3, 4   
Y : 2, 4, 6, 8



Five Point Summary and Visualization

11. Problem:   
Determine the five-point summary for the dataset: 5, 8, 12, 14, 18, 20, 24 .

12. Problem:   
A box plot shows the median closer to Q1, with a long tail extending to the right. What does this indicate about the dataset's skewness?

13. Problem:   
Construct a histogram for the following dataset: 2, 2, 3, 3, 3, 4, 5, 6, 6, 7 .

Suggest appropriate bin sizes.



Application Problems

14. Problem:   
A factory measures daily production output (units): 200, 210, 190, 220, 230, 240, 205 .

Find the standard deviation.

15. Problem:   
 You are analyzing sales data for two products.

Product A: Mean sales = 100 , Standard deviation = 20 , Standard deviation = 30 Product B: Mean sales = 150   
Which product has higher relative variability?

