Statistics Word Problems

Problem 1: Standard Deviation

- The ages of five employees in a small company are 25, 30, 35, 40, and 45 years. Calculate the standard deviation of their ages.

Problem 2: Combined Mean

- Class A has an average test score of 85 from 20 students. Class B has an average test score of 78 from 25 students. What is the combined mean score of both classes?

Problem 3: Frequency Distribution

- A survey was conducted on the number of books read by students in a month. The results are: 0 books (5 students), 1 book (10 students), 2 books (8 students), 3 books (12 students), and 4 books (5 students). What is the average number of books read per student?

Problem 4: Box Plot Interpretation

- The following five-number summary represents the scores of students in a test: Minimum = 50, Q1 = 60, Median = 70, Q3 = 80, Maximum = 90. What is the interquartile range (IQR) and what does it tell you about the distribution of the scores?

Problem 5: Probability of Multiple Events

- A deck of cards has 52 cards. What is the probability of drawing an ace or a king?

Problem 6: Cumulative Frequency

- The weights (in kg) of 10 students are: 50, 55, 60, 62, 65, 68, 70, 72, 75, 78. Construct the cumulative frequency table.

Problem 7: Comparing Box Plots

- Two classes have the following five-number summaries for their test scores:
  - Class A: Minimum = 55, Q1 = 65, Median = 75, Q3 = 85, Maximum = 95
  - Class B: Minimum = 50, Q1 = 60, Median = 70, Q3 = 80, Maximum = 90
- Which class has a wider interquartile range and what does it indicate?

Problem 8: Histogram Interpretation

- The histogram shows the number of hours students studied in a week: 0-2 hours (4 students), 3-5 hours (6 students), 6-8 hours (8 students), 9-11 hours (2 students). How many students studied more than 5 hours?

Problem 9: Outlier Detection

- The heights (in cm) of a group of students are: 150, 152, 155, 158, 160, 165, 170, 172, 175, and 200. Identify any outliers in the data set using the IQR method.

Problem 10: Two-Way Table

- A survey was conducted to find out the favorite sports of students. The results are displayed in a two-way table:

	Soccer	Basketball	Tennis
Boys	20	15	5
Girls	10	10	10

- What is the probability that a randomly chosen student prefers basketball?