Acumen Teach
To the point

Statistics & Data Master-box

Statistics—Logic—Mathematical knowledge application—Data Analysis—Averages—Graphs

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Easy (12 Questions)	/12
Moderate(12 Questions)	/24
Difficult(12 Questions)	/36
Total Marks	**/72**

How did you do?

2 hours

38 Questions

Easy Questions

1. Mode represents the most frequently occurring value in a data set.
2. Mean = (4 + 6 + 8 + 10) ÷ 4 = 7.
3. Median = 7 (after arranging data: 3, 5, 7, 9, 12).
4. Range = 22 − 10 = 12.
5. 25% = 1/4 of the total.
6. Probability of red ball = 3/10.
7. Most frequent outcome corresponds to the highest frequency in the table.
8. Outlier: A value significantly different from the rest of the data.
9. Cumulative frequency: Running total of frequencies in a data set.
10. Positive correlation: Points trend upwards as x increases.
11. Probability of even number = 3/6 = 1/2.
12. Line in the middle of a box plot = Median.

Moderate Questions

13. Mean = ((1×3) + (2×5) + (3×2)) ÷ 10 = 1.9.
14. Probability of at least one head = 1 − Probability of no heads = 1 − (1/2 × 1/2) = 3/4.
15. Area in histogram represents frequency density × class width.
16. Lower quartile = 7 (position 1/4 of data in sorted order).
17. Spread comparison: Use the range or interquartile range.
18. Weak negative correlation: As x increases, y slightly decreases.
19. Median from cumulative frequency graph: Locate value at $n/2$ position.
20. Probability tree for heads/tails: 1/2 for each branch.
21. Neither = Total − French − German + Both = 30 − 15 − 10 + 5 = 10.
22. Stratified sample = 50 × (30 ÷ 300) = 5 students.
23. Compare box plot medians and IQRs for spread and central tendency.
24. Grouped mean = Estimate midpoint × Frequency ÷ Total frequency = 15.

Difficult Questions

25. Standard deviation = sqrt(((*x* − mean)^2) ÷ *n*).
26. Probability with replacement = (3/5) × (3/5) = 9/25.
27. Probability without replacement = (3/5) × (2/4) = 3/10.
28. Outlier effect: Skews mean more than median.
29. *y* = *mx* + *c*: *m* = gradient, *c* = *y*-intercept.
30. Compare using IQR for spread and median for central tendency.
31. Z-score = (75 − 70) ÷ 5 = 1.
32. Chi-squared: Tests independence between categorical variables.
33. Probability tree: Multiply dependent probabilities for branches.
34. Normal distribution: Symmetric, bell-shaped curve.
35. Expected value = (0.1 × 20) + (0.9 × 0) − 5 = −3.
36. Interquartile range = Q3 − Q1, read from cumulative graph.