some basic questions on mean, median, mode, standard deviation, covariance, and correlation, framed within a business context:

Mean

1. **Question:** A retail store tracked its daily sales for a week, recording the following amounts (in dollars): 250,300, 350,400, 450,500, $550. What is the mean daily sales amount for the week?

**Scenario:** Understanding average daily sales helps in forecasting future sales and managing inventory.

Median

1. **Question:** An online service received customer satisfaction ratings over the last month. The ratings were: 2, 4, 3, 5, 3, 4, 4, 5, 3. What is the median customer satisfaction rating?

**Scenario:** Identifying the median rating can help the service understand the typical customer experience.

Mode

1. **Question:** A company analyzed the number of products sold each day over a month, recording the following sales figures: 10, 12, 12, 14, 14, 14, 15, 15, 16, 16, 17. What is the mode of the daily product sales? **Scenario:** Knowing the mode can help the company identify the most common sales volume and adjust production accordingly.

Standard Deviation

1. **Question:** A small business tracked its monthly revenues (in thousands of dollars) for the past six months: 20,22, 21,23, 19,24. Calculate the standard deviation of the monthly revenues. **Scenario:** Understanding revenue volatility helps in financial planning and risk management.

Covariance

1. **Question:** A financial analyst examines the monthly returns of two stocks, A and B, over the past year. The returns (in percentage) for Stock A are: 2, 3, 4, 5, 3, 4, 5, 3, 4, 5, 3, 4. For Stock B: 1, 2, 1, 3, 2, 1, 3, 2, 1, 3, 2, 1. Calculate the covariance between the returns of Stock A and Stock B. **Scenario:** Covariance can help in assessing how the returns on two stocks move together and in portfolio diversification decisions.

Correlation

1. **Question:** A company tracks the number of marketing emails sent each month and the corresponding number of website visits. The data for the last six months is as follows: (Emails Sent: 100, 150, 200, 250, 300, 350), (Website Visits: 50, 75, 100, 125, 150, 175). Calculate the correlation coefficient between the number of emails sent and the website visits. **Scenario:** Correlation helps in understanding the strength and direction of the relationship between marketing efforts and website traffic.

<https://chatgpt.com/share/2ee38f17-1afa-4c2e-93c9-1b3e8bfb2f3d>