Z-scores Quiz PDF

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Which statistical measure is essential for calculating a Z-score?

- ◯ Median
- ◯ Mode
- ◯ Standard deviation
- ◯ Range

What is the Z-score of a data point that is exactly one standard deviation below the mean?

- ◯ -1
- ◯ 0
- ◯ 1
- ◯ 2

Which of the following is the formula for calculating a Z-score?

- ◯ $Z = (X + \mu) / \sigma$
- ◯ $Z = (X - \mu) / \sigma$
- ◯ $Z = (X \times \mu) / \sigma$
- ◯ $Z = (X - \sigma) / \mu$

Which of the following best describes the purpose of a Z-score?

- ◯ To calculate the mean of a dataset
- ◯ To determine the range of a dataset
- ◯ To measure how far a data point is from the mean
- ◯ To find the median of a dataset

If a Z-score is significantly higher than 3, what does this typically indicate?

- ◯ The data point is very close to the mean
- ◯ The data point is an outlier

- ◯ The data point is within the normal range
- ◯ The data point is at the mean

What does a positive Z-score indicate?

- ◯ The data point is below the mean
- ◯ The data point is above the mean
- ◯ The data point is at the mean
- ◯ The data point is an outlier

What can Z-scores help determine in a dataset? (Select all that apply)

- ☐ The central tendency
- ☐ The probability of a score occurring
- ☐ The presence of outliers
- ☐ The range of the dataset

Which of the following statements about the empirical rule are correct? (Select all that apply)

- ☐ 68% of data falls within 1 Z-score of the mean
- ☐ 95% of data falls within 2 Z-scores of the mean
- ☐ 99.7% of data falls within 3 Z-scores of the mean
- ☐ 50% of data falls within 1 Z-score of the mean

What steps would you take to identify outliers using Z-scores in a dataset?

Discuss the relationship between Z-scores and the normal distribution.

What are the steps to calculate a Z-score? (Select all that apply)

- [ ] Subtract the mean from the data point
- [ ] Multiply the result by the standard deviation
- [ ] Divide the result by the standard deviation
- [ ] Add the mean to the data point

How does the standard deviation of a dataset influence the Z-scores of its data points?

Which of the following are true about Z-scores? (Select all that apply)

- [ ] They can be used to compare scores from different datasets
- [ ] They are always positive
- [ ] They indicate how many standard deviations a data point is from the mean
- [ ] They are only applicable to normally distributed data

Describe a real-world scenario where calculating a Z-score would be beneficial.

Why might a researcher choose to use Z-scores when analyzing data?

In a normal distribution, approximately what percentage of data falls within 1 Z-score of the mean?

- ◯ 50%
- ◯ 68%
- ◯ 95%
- ◯ 99.7%

What does a Z-score of 0 indicate about a data point?

- ◯ It is an outlier
- ◯ It is below the mean
- ◯ It is above the mean
- ◯ It is equal to the mean

In which scenarios can Z-scores be useful? (Select all that apply)

- ☐ ComparING test scores from different exams
- ☐ Determining the mode of a dataset
- ☐ Identifying outliers in a dataset
- ☐ Calculating the median of a dataset

Which of the following can affect the calculation of a Z-score? (Select all that apply)

- ☐ The mean of the dataset
- ☐ The mode of the dataset
- ☐ The standard deviation of the dataset
- ☐ The range of the dataset

Explain how Z-scores can be used to compare data from different datasets.