1. Gaussian Distribution Charts (Page 601-602)

Which of the following is true about a Gaussian (normal) distribution?
A) It is always symmetric around the mean
B) It has equal mean and median
C) It is completely defined by its mean and variance
D) All of the above

Answer: D) All of the above

2. Error Testing in Machine Learning (Page 568-570)

Which statistical test is commonly used to compare the performance of two classification algorithms?
A) Chi-square test
B) McNemar's test
C) ANOVA
D) Linear regression

Answer: B) McNemar's test

3. Training Error vs. Testing Error (Page 37-38)
What is the main reason for the difference between training error and testing error in machine learning models?
A) The testing dataset contains more noise
B) The training dataset is always smaller than the testing dataset
C) The model may be overfitting to the training data
D) The model always has lower error on testing data

Answer: C) The model may be overfitting to the training data

4.Confidence Intervals in Error Estimation (Page 564-565)

A confidence interval for the classification error is used to:
A) Quantify the uncertainty in the estimated error rate
B) Optimize hyperparameters
C) Select features for dimensionality reduction
D) Improve the performance of decision trees

Answer: A) Quantify the uncertainty in the estimated error rate

5. Parametric Classification (Page 66-68)

A key assumption in parametric classification is that:
A) The number of parameters is fixed and does not grow with the dataset
B) The decision boundaries must always be linear
C) The model parameters change dynamically with new data
D) The class conditional densities must be unknown

Answer: A) The number of parameters is fixed and does not grow with the dataset