WAYGROUND formerly Quizizz Worksheets

Name

Class

Date

3. Naive Bayes

Total questions: 13

Worksheet time: 10mins

Instructor name: Puneet Kansal

1. Naive Bayes classifier assumes which of the following?

a) Features are conditionally independent given the class

b) Classes are conditionally independent

c) Features are independent of the class

d) Features are linearly independent

2. If all features are perfectly correlated, Naive Bayes will:

a) Overfit severely

b) Still work surprisingly well in practice

c) Perform better than Logistic Regression

d) Fail completely

3. Which Naive Bayes variant is suitable for **continuous features**?

a) Categorical NB

b) Bernoulli NB

c) Gaussian NB

d) Multinomial NB

4. Gaussian Naive Bayes assumes data follows:

a) Normal distribution

b) Uniform distribution

c) Poisson distribution

d) Exponential distribution

5. Which Naive Bayes model is best for **word frequency counts**?

a) Multinomial NB

b) Categorical NB

c) Gaussian NB

d) Bernoulli NB

6. Bernoulli Naive Bayes works best when features are:

a) Multivalued

b) Ordinal

c) Continuous

d) Binary

7. Which statement is TRUE?

a) Naive Bayes always overfits
b) Naive Bayes is fast and scalable
c) Naive Bayes cannot handle missing values
d) Naive Bayes needs large data

8. Why does Naive Bayes handle high-dimensional data well?

a) Feature selection
b) Dimensionality reduction
c) Regularization
d) Independence assumption

9. Naive Bayes decision boundary is:

a) Quadratic
b) Always linear
c) Always non-linear
d) Linear in log-probability space

10. Why does Naive Bayes often outperform complex models on small datasets?

a) Regularization
b) Lower variance
c) Lower bias
d) Feature selection

11. Which statement is mathematically TRUE?

a) Naive Bayes maximizes likelihood
b) Naive Bayes minimizes classification error
c) Naive Bayes maximizes margin
d) Naive Bayes minimizes log-loss

12. Why is Naive Bayes extremely fast at prediction time?

a) No matrix inversion
b) All of the above
c) No pairwise feature interaction
d) No gradient descent

13. If Naive Bayes assumptions are violated, which property STILL holds?

a) Minimal error rate
b) Perfect calibration
c) Consistent ranking
d) Optimal probabilities

Answer Keys

1. a) Features are conditionally independent given the class
2. b) Still work surprisingly well in practice
3. c) Gaussian NB
4. a) Normal distribution
5. a) Multinomial NB
6. d) Binary
7. b) Naive Bayes is fast and scalable
8. d) Independence assumption
9. d) Linear in log-probability space
10. b) Lower variance
11. a) Naive Bayes maximizes likelihood
12. b) All of the above
13. c) Consistent ranking