Important question for Tutorial

1. What is linear classification? Explain the concept of decision boundaries and how they relate to linear classifiers.
2. Discuss the concept of bagging and boosting in ensemble learning. How do they address the problem of overfitting?
3. What are ensemble classifiers, and how do they differ from individual classifiers? Provide examples of popular ensemble methods.
4. What is model selection, and why is it important in machine learning? Describe at least two common techniques for model selection.
5. Define cross-validation and explain why it is used in machine learning. Describe at least two popular methods of cross-validation.
6. What is probabilistic modeling in the context of machine learning? How does it differ from deterministic modeling?
7. Discuss at least two common probabilistic models used in machine learning. What are their strengths and weaknesses?
8. Define topic modeling and discuss its applications in natural language processing (NLP). How does probabilistic inference play a role in topic modeling algorithms such as Latent Dirichlet Allocation (LDA)?
9. Describe at least two machine learning algorithms commonly used for predicting preterm birth. How do these algorithms utilize probabilistic modeling principles?
10. Compare and contrast machine learning and statistics. How do they differ in their goals, methodologies, and applications?