# Audience Questions

1. **What is the main goal of this housing price analysis project, and what business problems does it aim to solve?**  
   The main goal is to objectively predict wine quality using chemical properties, helping producers reduce reliance on subjective expert tasting and enabling systematic, data-driven quality control.
2. **How does location (city, neighborhood) impact housing prices within this dataset, particularly in areas like Seattle versus suburban locations?**  
   This analysis does not address location or housing prices; it focuses solely on predicting wine quality using physicochemical features, so city or neighborhood effects are not considered.
3. **Which housing features (bedrooms, bathrooms, square footage) showed the strongest correlation with sale prices?**  
   Alcohol content showed the strongest positive correlation with wine quality, while volatile acidity had the strongest negative correlation. Sulphates also contributed significantly to predicting wine quality.
4. **What data cleaning and preparation steps were necessary before analyzing this dataset?**  
   Data cleaning included combining datasets, adding a wine type column, handling missing values, applying feature scaling, and using stratified train-test splits to maintain balanced quality distribution.
5. **Which machine learning models performed best for predicting housing prices, and why did you select those specific models?**  
   Random Forest performed best for predicting wine quality due to its ability to model complex, non-linear relationships and feature interactions, resulting in the highest accuracy and F1-score.
6. **How did you address potential multicollinearity between features like square footage of living space and number of bedrooms?**  
   The analysis does not specifically mention multicollinearity handling, but using Random Forest helps mitigate its impact, as tree-based models are less sensitive to correlated features.
7. **What time patterns or seasonality did you observe in the housing market based on the sale dates?**  
   No time patterns or seasonality were observed, as the dataset and analysis did not include temporal features or sale dates; the focus remained on physicochemical wine properties.
8. **How significant was the impact of waterfront properties and view quality on home valuations?**  
   Waterfront properties and view quality are not relevant to this wine quality analysis, which is limited to chemical and physical wine attributes rather than real estate features.
9. **Did renovated homes show a significant price premium compared to non-renovated properties of similar size and location?**  
   The study does not analyze home renovations or price premiums, as it only examines wine quality based on measurable physicochemical features, not property or renovation data.
10. **What actionable recommendations would you provide to homeowners looking to maximize their property value?**  
    Wine producers should optimize alcohol content, reduce volatile acidity, implement Random Forest models, and integrate automated chemical analysis for real-time, data-driven quality prediction and control.