Creating 10 tasks that encompass various aspects of SQL, such as joins, aggregations, subqueries, and data analysis. These tasks are designed to evaluate the candidate's proficiency in handling complex SQL queries and their understanding of data relationships.

Task 1: Join Sales and Dealer Data
Objective: Combine sales data with dealer information and calculate total sales for each dealer.
Task 2: Dealer Sales by Product
Objective: Find the total sales for each product by each dealer.
Task 3: Sales Forecast Accuracy
Objective: Compare actual sales with forecasted sales for each dealer and product.
Task 4: Product Margin Analysis
Objective: Calculate the total sales and average margin for each product.
Task 5: Dealer Performance Analysis
Objective: Analyze the performance of dealers based on their age and total sales.
Task 6: Dealer Subscription Effect on Sales
Objective: Determine the effect of subscription to credit services on dealer sales.
Task 7: Monthly Sales Trend Analysis
Objective: Analyze the monthly sales trend for each dealer.
Task 8: Storage Capacity and Sales Correlation
Objective: Analyze if there's a correlation between storage capacity and total sales.
Task 9: Sales Aggregation with Conditional Logic
Objective: Calculate total sales, categorizing dealers based on whether they are road facing.
Task 10: Advanced Dealer Performance Analysis
Objective: Perform a complex analysis involving multiple tables to find dealers with above-average income and their total sales.

These tasks are intended to challenge the candidate and assess their ability to formulate and execute complex SQL queries, demonstrating proficiency in data manipulation and analysis.

Creating 10 tasks focused on using window functions to analyze dealer, storage, product, and sales performance will provide a thorough assessment of a senior data analyst's skills in SQL.

Task 1: Dealer Sales Ranking
Objective: Rank each dealer by their total sales.
Task 2: Cumulative Sales by Dealer
Objective: Calculate the cumulative sales for each dealer over time.
Task 3: Moving Average of Sales
Objective: Compute a 3-month moving average of sales for each dealer.
Task 4: Dealer Sales Growth Percentage
Objective: Calculate month-over-month sales growth percentage for each dealer.
Task 5: Dealer Income Percentile Rank
Objective: Determine the percentile rank of each dealer based on income.
Task 6: Top Performing Products by Sales
Objective: Identify the top 3 performing products by sales for each dealer.
Task 7: Dealer Sales Comparison to Average
Objective: Compare each dealer's sales to the average sales of all dealers.
Task 8: Dealer Age and Sales Correlation
Objective: Analyze correlation between dealer age and sales performance.
Task 9: Product Sales and Margin Analysis
Objective: Analyze sales and margin for each product.
Task 10: Sequential Invoice Analysis
Objective: Analyze the sequential order of invoices for each dealer.

These tasks cover a range of complex SQL scenarios, requiring the candidate to demonstrate their expertise in utilizing window functions for data analysis, a crucial skill for a senior data analyst.

Creating tasks that specifically focus on using window functions for segmentation, such as decile segmentation, is an excellent way to assess a candidate's advanced SQL skills. Below are 10 tasks designed to test proficiency in these areas,

Task 1: Dealer Sales Decile Segmentation
Objective: Segment dealers into deciles based on total sales.
Task 2: Product Sales Quartile Segmentation
Objective: Segment products into quartiles based on total sales.
Task 3: Dealer Income Percentile Ranking
Objective: Rank dealers based on their income in percentiles.
Task 4: Dealer Age Segmentation
Objective: Segment dealers into 5 groups based on dealer age.
Task 5: Storage Capacity Segmentation
Objective: Segment dealers based on their storage capacity.
Task 6: Sales Performance Ranking by Product
Objective: Rank products by sales performance within each dealer.
Task 7: Monthly Sales Segmentation
Objective: Segment monthly sales into deciles.
Task 8: Subscription Service Segmentation
Objective: Segment dealers based on their subscription to credit services and sales performance.
Task 9: Forecast Accuracy Segmentation
Objective: Segment dealers based on the accuracy of their sales forecasts.
Task 10: Product Margin Decile Ranking
Objective: Rank products into deciles based on their margin.

These tasks are designed to challenge the candidate's ability to use SQL window functions for advanced segmentation and ranking. They cover a wide range of scenarios, testing the candidate's proficiency in handling complex data analysis tasks.