1- **Calculate Total Sales Revenue by Year**

**SELECT YEAR(OrderDate) AS OrderYear,**

**SUM(SalesAmount) AS TotalSalesRevenue**

**FROM Sales.SalesOrderHeader**

**GROUP BY YEAR(OrderDate)**

**ORDER BY OrderYear;**

**2- Find the Most Popular Products by Quantity Sold**

**SELECT ProductID,**

**ProductName,**

**SUM(OrderQty) AS TotalQuantitySold**

**FROM Sales.SalesOrderDetail**

**GROUP BY ProductID, ProductName**

**ORDER BY TotalQuantitySold DESC**

**LIMIT 10; -- Get top 10 most popular products**

**3- Identify the Top Selling Product Categories**

**SELECT ProductCategoryName,**

**SUM(OrderQty) AS TotalQuantitySold**

**FROM Sales.SalesOrderDetail sod**

**JOIN Production.Product prod ON sod.ProductID = prod.ProductID**

**JOIN Production.ProductSubcategory subcat ON prod.ProductSubcategoryID =**  **subcat.ProductSubcategoryID**

**JOIN Production.ProductCategory cat ON subcat.ProductCategoryID =**  **cat.ProductCategoryID**

**GROUP BY ProductCategoryName**

**ORDER BY TotalQuantitySold DESC;**

**4- Find Customers with High Total Sales**

**SELECT CustomerID,**

**FirstName,**

**LastName,**

**(SELECT SUM(TotalDue)**

**FROM Sales.SalesOrderHeader**

**WHERE CustomerID = c.CustomerID) AS TotalSales**

**FROM Sales.Customer c**

**ORDER BY TotalSales DESC**

**LIMIT 10; -- Top 10 customers with highest total sales**

**5- Identify Customers who Have Not Made Purchases**

**SELECT CustomerID,**

**FirstName,**

**LastName**

**FROM Sales.Customer**

**WHERE CustomerID NOT IN (SELECT DISTINCT CustomerID FROM**  **Sales.SalesOrderHeader);**

**6- List Products with Quantity Sold Greater Than Average**

**SELECT ProductID,**

**Name,**

**ListPrice,**

**Color**

**FROM Production.Product**

**WHERE ProductID IN (SELECT ProductID**

**FROM Sales.SalesOrderDetail**

**GROUP BY ProductID**

**HAVING SUM(OrderQty) > (SELECT AVG(OrderQty) FROM Sales.SalesOrderDetail));**

**7- Calculate Running Total Sales Amount**

**SELECT OrderDate,**

**SalesOrderID,**

**SalesAmount,**

**SUM(SalesAmount) OVER (ORDER BY OrderDate) AS RunningTotal**

**FROM Sales.SalesOrderHeader;**

**8- Calculate Moving Average Sales Amount**

**SELECT OrderDate,**

**SalesOrderID,**

**SalesAmount,**

**AVG(SalesAmount) OVER (ORDER BY OrderDate ROWS BETWEEN 2 PRECEDING AND CURRENT ROW) AS MovingAverage**

**FROM Sales.SalesOrderHeader;**

**9- Calculate Percentile Rank of Sales Amount**

**SELECT SalesOrderID,**

**TotalDue,**

**PERCENT\_RANK() OVER (ORDER BY TotalDue) AS PercentileRank**

**FROM Sales.SalesOrderHeader;**

**10- Find Employees with No Sales Orders**

**SELECT BusinessEntityID,**

**FirstName,**

**LastName**

**FROM HumanResources.Employee**

**WHERE BusinessEntityID NOT IN (SELECT DISTINCT SalesPersonID FROM Sales.SalesOrderHeader);**