

When browsing any of the above, ensure the notes you choose cover:

## 1. Scalar Functions

- String functions (e.g., `CONCAT`, `SUBSTRING`, `TRIM`) and their maximum input lengths.
- Numeric functions (e.g., `ROUND`, `CEILING`, `FLOOR`) and precision/scale limits.
- Date/Time functions (e.g., `DATEADD`, `DATEDIFF`, `EXTRACT`) with acceptable date ranges.
- Conversion functions (`CAST`, `CONVERT`) and data type compatibility (e.g., `VARCHAR` → `INT`).

## 2. Aggregate Functions

- `SUM`, `AVG`, `MIN`, `MAX`, `COUNT`, and Group By constraints (every non-aggregated column must be grouped).
- `GROUPING SETS`, `ROLLUP`, `CUBE` (when available), and their limitations (e.g., not all dialects support `CUBE`).

## 3. Window Functions

- Ranking (`ROW_NUMBER`, `RANK`, `DENSE_RANK`), aggregate over partition (`SUM()` `OVER (PARTITION BY...)`).
- Frame clauses (`ROWS BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW`), and notes on how `RANGE` vs. `ROWS` differs per dialect.

## 4. Conditional Expressions

- `CASE WHEN ... THEN ... ELSE ... END` (maximum number of WHEN clauses—for example, Oracle historically allowed 50 WHENS).
- `COALESCE`, `NULLIF`, `DECODE` (Oracle-specific), and differences in null handling.

## 5. Set Operations & Joins

- `UNION` vs. `UNION ALL` (duplicates, sort costs).
- `INTERSECT`, `EXCEPT / MINUS` and which dialects support them.
- Join types (INNER, LEFT/RIGHT/FULL OUTER, CROSS) and how nulls/projections behave under each.

## 6. Limiting & Pagination

- `LIMIT n` (MySQL, PostgreSQL) vs. `TOP n` (SQL Server) vs. `FETCH FIRST n ROWS ONLY` (ANSI SQL).
- `OFFSET` behavior (what happens if `OFFSET > row count`, how to avoid negative pagination).

## 7. Subqueries & Derived Tables

- Scalar subqueries (single-value), multi-row subqueries with `IN / ANY / ALL`, correlated subqueries.
- `EXISTS` vs. `NOT EXISTS`, and performance considerations (e.g., MySQL's optimizer special case).

## 8. Data Definition & Modification

- `CREATE TABLE ...` constraints (`PRIMARY KEY`, `UNIQUE`, `CHECK`, `FOREIGN KEY`) and maximum nesting for `CHECK` constraints.
- `INSERT ... SELECT`, `UPDATE` with `JOIN`, `DELETE` with subqueries.