EXCEL OPERATOR - NOTES

Logical and Comparison Operators in Microsoft Excel

Microsoft Excel includes a range of logical and comparison operators that are used to evaluate expressions and return **Boolean values**—either TRUE (1) or FALSE (0). These are fundamental in conditional formulas, data validation, and logical decision-making within Excel spreadsheets.

Boolean Values in Excel

- **TRUE**: Equivalent to 1
- **FALSE**: Equivalent to 0

Comparison Operators

These operators compare values on the **left-hand side (LHS)** with values on the **right-hand side (RHS)**.

Greater Than (>)

Checks if the LHS is greater than the RHS.

Examples:

- 5 > 2 → TRUE
- 4 > 2 → TRUE
- 5 > 9 → FALSE
- 8 > 5 → TRUE
- 5 > 5 → FALSE

Greater Than or Equal To (>=)

Checks if the LHS is greater than or equal to the RHS.

Examples:

- 5 >= 5 → TRUE
- 3 >= 5 → FALSE
- 5 >= 2 → TRUE
- 4 >= 9 → FALSE

Less Than (<)

Checks if the LHS is less than the RHS.

Examples:

- 4 < 5 → TRUE
- 2 < 9 → TRUE
- 5 < 2 → FALSE
- 5 < 5 → FALSE

Less Than or Equal To (<=)

Checks if the LHS is less than or equal to the RHS.

Examples:

- 5 <= 5 → TRUE
- 3 <= 5 → TRUE

Equal To (=)

Checks if both sides are exactly equal.

Examples:

- 5 = 5 → TRUE

- 4 = 4 → TRUE
- 4 = 3 + 1 → TRUE
- 1 = 1 → TRUE
- 5 > 2 = 4 > 2 → TRUE

Not Equal To (<> or !=)

Checks if both sides are **not** equal. Returns TRUE if values are different, FALSE if they are the same.

Examples:

- 5 <> 4 → TRUE
- 5 <> 5 → FALSE
- 4 <> 3 + 1 → FALSE
- 4 <> 3 → TRUE

Logical Functions in Excel

NOT()

Reverses the logical value of its argument.

Function: NOT(logical)

Examples:

- NOT(5 > 2) → FALSE
- NOT(4 > 5) → TRUE

MOD()

Returns the remainder after a number is divided by a divisor.

Function: MOD(number, divisor)

Examples:

- MOD(4, 2) → 0
- MOD(5, 2) → 1

AND()

Returns TRUE only if **all** conditions are TRUE.

Function: AND(condition1, condition2, ...)

Examples:

- AND(4 > 2, 5 > 2) → TRUE
- AND(8 > 2, 9 > 11) → FALSE

AND Truth Table:

LHS	RHS	Result
T	T	T
T	F	F
F	T	F
F	F	F

OR()

Returns TRUE if **at least one** condition is TRUE.

Function: OR(condition1, condition2, ...)

Examples:

- OR(5 < 2, 4 < 2) → FALSE
- OR(5 > 2, 4 < 2) → TRUE

OR Truth Table:

LHS	RHS	Result
T	T	T
T	F	T
F	T	T
F	F	F
