Excel Formulas Practice Notes

Max-Min

Definition: The MAX function returns the largest value in a range; MIN returns the smallest.
Syntax: MAX(number1, [number2], …) MIN(number1, [number2], …)
Example: Example: =MAX(C2:C10) → Finds the highest salary. =MIN(C2:C10) → Finds the lowest salary.
Tips: Use for quickly finding limits in numeric data, like salaries, dates, or scores.
Use Case: Data analysts often use MAX/MIN to check ranges, outliers, or earliest/latest dates.

IF-IFS

Definition: IF tests a condition and returns values for TRUE or FALSE. IFS tests multiple conditions sequentially.
Syntax: IF(logical_test, value_if_true, value_if_false) IFS(condition1, value1, [condition2, value2], …)
Example: Example: =IF(Age>30, "Old", "Young") =IFS(F2="salesman","Sales", F2="HR","Fire", F2="Manager","Bonus")
Tips: Make sure conditions are written correctly. IFS does not have a default false option — add TRUE,"Default" at the end.
Use Case: Used to classify data (age groups, department actions, pass/fail results).

Len

Definition: LEN returns the number of characters in a text string, including spaces.
Syntax: LEN(text)
Example: Example: =LEN(B2) → Counts characters in a name.
Tips: Great for checking validity of IDs, phone numbers, or codes.
Use Case: Data cleaning: identify invalid phone numbers or overly short/long entries.

LeftRight

Definition: LEFT extracts characters from the start; RIGHT extracts from the end of a string.
Syntax: LEFT(text, num_chars) RIGHT(text, num_chars)
Example: Example: =LEFT(A2,3) → First 3 letters of a name. =RIGHT(D2,4) → Extracts year from date.
Tips: Useful for parsing structured text fields like IDs or dates.
Use Case: Extracting year/month from dates, region codes from IDs, etc.

DateToText

Definition: TEXT converts a date or number into text with a specific format.
Syntax: TEXT(value, format_text)
Example: Example: =TEXT(A2,"DD/MM/YYYY") → Converts 11/02/2001 into text '11/02/2001'.
Tips: Prevents Excel from auto-formatting dates. Essential when combining dates with text.
Use Case: Create readable reports or concatenate dates into strings.

TRIM

Definition: TRIM removes extra spaces, leaving only single spaces between words.
Syntax: TRIM(text)
Example: Example: =TRIM(B2) → Cleans names with accidental spaces.
Tips: Does not remove non-breaking spaces from web data (use CLEAN + TRIM).
Use Case: Cleaning raw data for consistency before analysis.

Concatenate

Definition: CONCATENATE (or & operator) joins multiple text strings into one.
Syntax: CONCATENATE(text1, text2, …) or text1 & text2
Example: Example: =CONCATENATE(A2," ",B2) → Joins first and last names. =A2&"."&B2;&"@gmail.com" → Creates email.
Tips: In Excel 2019+, use CONCAT or TEXTJOIN for more flexibility.
Use Case: Building full names, IDs, or custom strings like emails.

Substitute

Definition: SUBSTITUTE replaces specific text in a string with new text.
Syntax: SUBSTITUTE(text, old_text, new_text, [instance_num])
Example: Example: =SUBSTITUTE(A2,"-","/") → Replaces dashes with slashes in a date.
Tips: Instance_num lets you replace only the 1st, 2nd, etc. occurrence.
Use Case: Standardizing formats (dates, codes, names).

SUM-SumIF

Definition: SUM adds numbers. SUMIF adds numbers based on one condition. SUMIFS adds based on multiple conditions.
Syntax: SUM(number1,…) SUMIF(range, criteria, [sum_range]) SUMIFS(sum_range, criteria_range1, criteria1, …)

Example: Example: =SUM(C2:C10) → Total salaries. =SUMIF(C2:C10,">50000") → Total salaries over 50k.
Tips: SUMIFS allows combining multiple filters (like gender AND age).
Use Case: Financial totals, category-based calculations.

Count-CountIF

Definition: COUNT counts numbers. COUNTIF counts cells meeting one condition. COUNTIFS counts with multiple conditions.
Syntax: COUNT(range) COUNTIF(range, criteria) COUNTIFS(range1, criteria1, …)
Example: Example: =COUNT(C2:C10) → Number of salaries. =COUNTIF(C2:C10,">45000") → Count over 45k.
Tips: COUNT only works on numbers, not text. Use COUNTA for all non-empty cells.
Use Case: Quickly get counts like how many employees earn above a threshold.

Days-NetworkDays

Definition: DAYS returns number of days between two dates. NETWORKDAYS returns working days (excludes weekends/holidays).
Syntax: DAYS(end_date, start_date) NETWORKDAYS(start_date, end_date, [holidays])
Example: Example: =DAYS(B2,A2) → Days worked. =NETWORKDAYS(A2,B2) → Working days between start and end.
Tips: Be careful with order of dates: DAYS(end,start).
Use Case: HR analytics, project timelines, employee attendance.