

1. What does the dollar (\$) sign do?

Ans:

The dollar sign (\$) is a symbol used primarily to represent currency, specifically the United States dollar. However, it's also used in other contexts, such as:

1. **Variable Naming in Programming**: In many programming languages like JavaScript, PHP, and Python, the dollar sign is used to declare or reference variables. For example, in PHP, variables start with a dollar sign, like `-$variable_name``.

2. **Regular Expressions**: In some programming languages, such as Perl and PHP, the dollar sign is used to represent the end of a line or string in regular expressions.

3. **Mathematics**: In mathematical notation, the dollar sign can be used to indicate currency values, similar to how it's used in the English language (\$10 means ten dollars).

4. \*\*Shell Scripting\*\*: In Unix-based systems, the dollar sign is used to reference variables in shell scripting.

In each of these contexts, the dollar sign serves to denote a specific type of value or to indicate a particular syntax or convention within the respective language or system.

2. How to Change the Reference from Relative to Absolute (or Mixed)?

Ans:

Changing a cell reference from relative to absolute (or mixed) is a common task in spreadsheet software like Microsoft Excel or Google Sheets. Here's how you can do it in both:

### Microsoft Excel:

1. \*\*Relative Reference\*\*: By default, when you enter a formula, Excel uses relative references. For example, if you write a formula in cell B1 referencing cell A1 as `=A1`, and then copy this formula to cell B2, it will automatically change to `=A2`.

2. \*\*Absolute Reference\*\*: To make a reference absolute, you use the dollar sign (\$) before the column letter and/or row number. For example,  $\$A\$1$  is an absolute reference to cell A1. When you copy a formula with absolute references, those references remain fixed.

3. \*\*Mixed Reference\*\*: To create a mixed reference, you fix either the row or column but not both. For example,  $\$A1$  is an absolute column reference but a relative row reference.  $A\$1$  is a relative column reference but an absolute row reference.

To quickly switch between reference types in Excel:

- \*\*Absolute\*\*: Press F4 after selecting the reference to toggle between absolute, mixed, and relative references.
- \*\*Mixed\*\*: Manually add dollar signs (\$) before the row or column reference you want to fix.

### ### Google Sheets:

1. \*\*Relative Reference\*\*: Like Excel, Google Sheets uses relative references by default.

2. \*\*Absolute Reference\*\*: To make a reference absolute, you can manually add dollar signs (\$) before the column letter and/or row number, similar to Excel. For example, `-$A$1-` is an absolute reference to cell A1.

3. \*\*Mixed Reference\*\*: Google Sheets also supports mixed references. You can fix either the row or column by adding a dollar sign (\$) before the row or column reference, respectively.

To quickly switch between reference types in Google Sheets:

- \*\*Absolute\*\*: Manually add dollar signs (\$) before the column letter and/or row number.
- \*\*Mixed\*\*: Manually add a dollar sign (\$) before either the row or column reference you want to fix.

In both Excel and Google Sheets, understanding and mastering relative, absolute, and mixed references are fundamental skills for working efficiently with formulas and functions in spreadsheets.

3. Explain the order of operations in excel?

Ans:

In Excel, when you create a formula that contains multiple operations, Excel follows a specific order of operations, also known as precedence, to calculate the result. This order ensures consistency and accuracy in calculations. The order of operations in Excel is as follows:

1. **\*\*Parentheses\*\***: Excel first evaluates expressions enclosed in parentheses. Operations within parentheses are calculated first, following the same order of operations.

2. **\*\*Exponents\*\***: Excel performs calculations involving exponents (such as raising a number

to a power) next. Exponents are represented by the caret symbol (^).

3. **Multiplication and Division**: Excel evaluates multiplication (\*) and division (/) operations next. These operations are evaluated from left to right.

4. **Addition and Subtraction**: Finally, Excel evaluates addition (+) and subtraction (-) operations. Like multiplication and division, these operations are evaluated from left to right.

It's essential to understand and use parentheses to control the order of operations in complex formulas. If parentheses are not used, Excel follows the default order of operations, which might not always produce the desired result. By using parentheses strategically, you can ensure that Excel calculates your formulas correctly according to your intended logic.

For example, consider the following formula:

---

$$= 5 * (3 + 2)^2 - 4 / 2$$

---

Following the order of operations, Excel would calculate it as follows:

1. Inside the parentheses:  $(3 + 2) = 5$
2. Exponentiation:  $5^2 = 25$
3. Multiplication:  $5 * 25 = 125$
4. Division:  $4 / 2 = 2$
5. Subtraction:  $125 - 2 = 123$

So, the result of the formula would be  $123$ .

4. What, according to you, are the top 5 functions in excel and write a basic syntax for any of two?

Ans:

Determining the "top" functions in Excel can vary depending on the specific needs and tasks of users, but here are five commonly used

functions:

1. \*\*SUM\*\*: Adds all the numbers in a range of cells.

Syntax: `=SUM(number1, [number2], ...)`

Example: `=SUM(A1:A10)`

2. \*\*VLOOKUP\*\*: Searches for a value in the first column of a table array and returns a value in the same row from another column you specify.

Syntax: `=VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])`

Example: `=VLOOKUP(A1, B1:C10, 2, FALSE)`

3. \*\*IF\*\*: Performs a logical test and returns one value if the condition is TRUE and another value if the condition is FALSE.

Syntax: `=IF(logical\_test, value\_if\_true, value\_if\_false)`

Example: `=IF(A1 > 10, "Greater than 10", "Less than or equal to 10")`

4. \*\*INDEX\*\*: Returns the value of a cell in a

specific row and column of a range.

Syntax: `=INDEX(array, row\_num,  
[column\_num])`

Example: `=INDEX(A1:B10, 3, 2)`

5. \*\*COUNTIF\*\*: Counts the number of cells within a range that meet a single condition.

Syntax: `=COUNTIF(range, criteria)`

Example: `=COUNTIF(A1:A10, ">10")`

Let's write the basic syntax for two of these functions:

### 1. SUM Function:

Syntax: `=SUM(number1, [number2], ...)`

- `number1`: The first number or range of cells to add together.
- `[number2]`: (optional) Additional numbers or ranges to add together.

Example: If you want to add the values in cells A1 to A10, the formula would be `=SUM(A1:A10)`.

## ### 2. VLOOKUP Function:

Syntax: `=VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])`

- `lookup\_value`: The value to search for in the first column of the table array.
- `table\_array`: The range of cells that contains the data.
- `col\_index\_num`: The column number in the table from which to retrieve the value.
- `[range\_lookup]`: (optional) TRUE for an approximate match or FALSE for an exact match. If omitted, TRUE is assumed.

Example: If you want to find the corresponding value of "Apples" in column B based on the lookup value in A1 within the range A1:B10 and return an exact match, the formula would be `=VLOOKUP(A1, A1:B10, 2, FALSE)`.

## 5. When would you use the subtotal function?

Ans:

The SUBTOTAL function in Excel is particularly useful when you're working with datasets and

you need to perform calculations like sum, average, count, etc. on filtered or subtotalled data. It's especially handy when you're dealing with large datasets where you might be applying filters or subtotals to analyze specific portions of the data.

Here are some scenarios where you might use the SUBTOTAL function:

1. **\*\*Filtering Data\*\***: When you filter data in Excel to focus on specific records, you often want to perform calculations on only the visible (filtered) data. The SUBTOTAL function allows you to do this, ensuring that your calculations are based only on the visible rows after filtering.

2. **\*\*Subtotaling Data\*\***: If you have subtotals in your dataset (e.g., subtotals for different regions or product categories), you might want to perform calculations on these subtotals. SUBTOTAL can help you calculate values based on the subtotals, ignoring the other rows.

3. \*\*Avoiding Double Counting\*\*: When you're creating complex reports with subtotals and totals, you may have multiple formulas for summing data. Using SUBTOTAL instead of SUM ensures that you don't double count data, as SUBTOTAL only includes visible rows in its calculation.

4. \*\*Dynamic Reports\*\*: If you're creating dynamic reports where users can filter data based on certain criteria, SUBTOTAL ensures that the calculated values adjust automatically based on the filtered data.

5. \*\*Grouped Data\*\*: If you've grouped rows in your worksheet (e.g., grouping by month or year), SUBTOTAL can help calculate values for each group without including the hidden rows.

Overall, the SUBTOTAL function is valuable for performing calculations on filtered or subtotalled data in Excel while ensuring accuracy and flexibility in your analyses.

6.What is the syntax of the vlookup function?

Explain the terms in it?

Ans:

The VLOOKUP function in Excel is used to search for a value in the first column of a table array and returns a value in the same row from another column you specify. Here's the syntax of the VLOOKUP function along with an explanation of its terms:

```excel

```
=VLOOKUP(Lookup_value, table_array,  
col_index_num, [range_lookup])
```

```

Let's break down each term:

1. **\*\*Lookup-value\*\***: This is the value you want to search for in the first column of the table array. It can be a value, a reference, or a cell reference.

2. **\*\*table\_array\*\***: This is the range of cells

that contains the data you want to search through. The first column of this range is where the lookup-value will be searched for, and the value to be returned will be found in one of the columns to the right of the lookup column.

3. **\*\*col\_index\_num\*\***: This is the column number in the table\_array from which to retrieve the value you want to return. For example, if the value you want to return is in the third column of the table\_array, col\_index\_num would be 3.

4. **\*\*[range\_lookup]\*\***: This parameter is optional. It specifies whether you want an approximate match or an exact match.

- If range\_lookup is TRUE or omitted, VLOOKUP will find the closest match to the lookup\_value that is less than or equal to the lookup\_value. This is useful when dealing with sorted data and wanting to find an approximate match.

- If range\_lookup is FALSE, VLOOKUP will only find

an exact match. If no exact match is found, it returns an error value. This is useful when you need to find an exact match, especially in unsorted data.

Here's an example of how you might use the VLOOKUP function:

Suppose you have a table of employee information where column A contains employee names, column B contains employee IDs, and you want to retrieve the ID of an employee named "John" from cell D2. You could use the following VLOOKUP formula:

```excel

```
=VLOOKUP("John", A1:B10, 2, FALSE)
```

```

This formula searches for "John" in the first column of the range A1:B10 and returns the corresponding value from the second column (employee ID) because the col\_index\_num is 2. The FALSE parameter ensures that only exact

matches are considered.