1. In Excel, a dollar sign($) can denote a currency format, but it has another common use: **indicating absolute cell references in formulas**.

**In an absolute reference**, each part of the reference (the letter that refers to the row and the number that refers to the column) is preceded by a “$”.

For example, $A$1 is an absolute reference to cell A1. Wherever the formula is copied or moved, it always refers to cell A1.

1. By default, a cell reference is relative. For example, when we refer to cell A2 from cell C2, we are referring to a cell that is two columns to the left (C minus A), and in the same row (2). A formula that contains a relative cell reference changes as we copy it from one cell to another. For example, if we copy the formula **=A2+B2** from cell C2 to C3, the formula references in C3 adjust downward by one row and become **=A3+B3**.

If we want to maintain the original cell reference when we copy it, we "lock" it by putting a dollar sign (**$**) before the cell and column references. For example, when we copy the formula **=$A$2+$B$2** from C2 to D2, the formula stays the same. This is an absolute reference.

In less frequent cases, we may want to make a cell reference "mixed" by preceding either the column or the row value with a dollar sign to "lock" either the column or the row (for example, $A2 or B$3). To change the type of cell reference:

1. Select the cell that contains the cell reference that we want to change.
2. Select the cell that contains the cell reference that you want to change.
3. In the formula bar, click the cell reference that you want to change.
4. Press alt+ T to move through the combinations.
5. **ORDER OF OPERATIONS**

When evaluating a formula, Excel follows a standard math protocol called “ORDER OF OPERATIONS”. In general, Excel’s order of operation follows the acronym **PEDMAS** (Parentheses, Exponents, Multiplication, Division, Addition, Subtraction) but with some customization to handle the formula syntax in an excel.

In summary, Excel solves formulas in the following order:

* 1. Parenthesis
  2. Reference operators
  3. Exponents
  4. Negation
  5. Multiplication and Division
  6. Addition and Subtraction
  7. Concatenation
  8. Logical operators

1. A) The **SUM** function

This function works to sum a group of numbers in a specified set of cells.

**Syntax: “=SUM(number1,number2,etc).**

B) The **TEXT** function

This function is used to convert a date (or number) into a text string in a particular format.

**Syntax:** “=TEXT” (value, format\_text).

C) The **VLOOKUP** function

The VLOOKUP function is used to search for names, phone numbers, or specific data on our sheet.

D) The **AVERAGE** function

The average function works to find the “arithmetic mean” for a group of cells.

E) The **CONCATENATE** function

Unlike the merge tool which physically merges two or more cells into a single cell, the concatenate function only combines the contents of the combined cells.

1. The SUBTOTAL function in Excel **allows users to create groups and then perform various other Excel functions such as SUM, COUNT, AVERAGE, PRODUCT, MAX, etc**. Thus, the SUBTOTAL function in Excel helps in analyzing the data provided.
2. **VLOOKUP FUNCTION:**

VLOOKUP stands for 'Vertical Lookup'. It is a function that makes Excel search for a certain value in a column (the so called 'table array'), in order to return a value from a different column in the same row.

Syntax: =VLOOKUP(What you want to look up, where you want to look for it, the column number in the range containing the value to return, return an Approximate or Exact match – indicated as 1/TRUE, or 0/FALSE).

For example:

=VLOOKUP(A2,A10:C20,2,TRUE)

=VLOOKUP("Fontana",B2:E7,2,FALSE)

=VLOOKUP(A2,'Client Details'!A:F,3,FALSE)