Advance Excel Assignment 2

1. **What does the dollar ($) sign do?**
   The dollar sign fixes the reference to a given cell, so that it remains unchanged no matter where the formula moves. In other words, using $ in cell references allows you to copy the formula in Excel without changing references

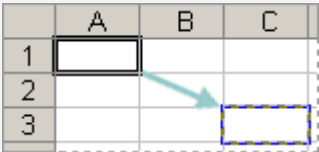2. **How to Change the Reference from Relative to Absolute (or Mixed)?**
   By default, a cell reference is a relative reference, which means that the reference is relative to the location of the cell. If, for example, you refer to cell A2 from cell C2, you are actually referring to a cell that is two columns to the left (C minus A)—in the same row (2). When you copy a formula that contains a relative cell reference, that reference in the formula will change.
   Less often, you may want to mixed absolute and relative cell references by preceding either the column or the row value with a dollar sign—which fixes either the column or the row (for example, $B4 or C$4).
   To change the type of cell reference:
   1. Select the cell that contains the formula.
   2. In the formula bar Button image, select the reference that you want to change.
   3. Press F4 to switch between the reference types.
      The table below summarizes how a reference type updates if a formula containing the reference is copied two cells down and two cells to the right.

For a formula being copied:	If the reference is:	It changes to:
	A1 (absolute column and absolute row)	A1 (the reference is absolute)
	A$1 (relative column and absolute row)	C$1 (the reference is mixed)
	$A1 (absolute column and relative row)	$A3 (the reference is mixed)
	A1 (relative column and relative row)	C3 (the reference is relative)

3. Explain the order of operations in excel?

When evaluating a formula, Excel follows a standard math protocol called "order of operations". In general, Excel's order of operation follows the acronym PEMDAS (Parentheses, Exponents, Multiplication, Division, Addition, Subtraction) but with some customization to handle the formula syntax in a spreadsheet.

First, any expressions in parentheses are evaluated. Parentheses essentially override the normal order of operations to ensure certain operations are performed first.

Next, Excel will resolve references. This involves replacing cell references like A1 with the value from the cell, as well as evaluating range references like A1:A5, which become arrays of values. Other range operations like union (comma) and intersection (space) also happen at this time.

Next, Excel will perform exponentiation, negation, and percent conversions (in that order), followed by multiplication and division, addition and subtraction, and concatenation. Finally, Excel will evaluate logical operators, if present.

In summary, Excel solves formulas in the following order:
1. Parentheses
2. Reference operators
3. Exponents
4. Negation
5. Percent
6. Multiplication and Division
7. Addition and Subtraction
8. Concatenation
9. Logical operators

Note: If a formula contains multiple operators with the same priority (e.g. multiplication and division, or addition and subtraction), Excel will evaluate the operators from left to right.

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

1. IF

   Use the IF function, one of the logical functions, to return one value if a condition is true and another value if it's false.

   Syntax:

   IF(logical_test, value_if_true, [value_if_false])

2. SUMIFS

   SUMIFS is one of the most useful Excel functions. It sums values that meet specified criteria.

   Excel also has a function named SUMIF which does the same task except it can only test one condition, while SUMIFS can test many.

   Syntax:

   SUMIFS(sum_range, criteria_range1, criteria1, [criteria_range2, criteria2], ...)

3. COUNTIFS
4. TRIM
5. CONCATENATE

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

   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 analysing the data provided.

   Sometimes, we need data based on different categories. SUBTOTALS help us to get the totals of several columns of data broken down into various categories.
   For example, let's consider garment products of different sizes manufactured. The SUBTOTAL function will help you to get a count of different sizes in your warehouse.

6. **What is the syntax of the Vlookup function? Explain the terms in it?**

   There are four pieces of information that you will need in order to build the VLOOKUP syntax:

   1. The value you want to look up, also called the lookup value.
   2. The range where the lookup value is located. Remember that the lookup value should always be in the first column in the range for VLOOKUP to work correctly. For example, if your lookup value is in cell C2 then your range should start with C.
   3. The column number in the range that contains the return value. For example, if you specify B2:D11 as the range, you should count B as the first column, C as the second, and so on.
   4. Optionally, you can specify TRUE if you want an approximate match or FALSE if you want an exact match of the return value. If you don't specify anything, the default value will always be TRUE or approximate match.

   Now put all of the above together as follows:

   =VLOOKUP(lookup value, range containing the lookup value, the column number in the range containing the return value, Approximate match (TRUE) or Exact match (FALSE)).