Assignment – 2

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

The dollar sign in an Excel cell reference serves just one purpose - it tells Excel whether to change or not to change the reference when the formula is copied to other cells. We can reference one and the same cell in four different ways, for example A1, A1, $A1, and A$1.

The dollar sign in an Excel cell reference affects just one thing - it instructs Excel on how to treat the reference when the formula is moved or copied to other cells. In a nutshell, using the $ sign before the row and column coordinates makes an absolute cell reference that won't change. Without the $ sign, the reference is relative and it will change.

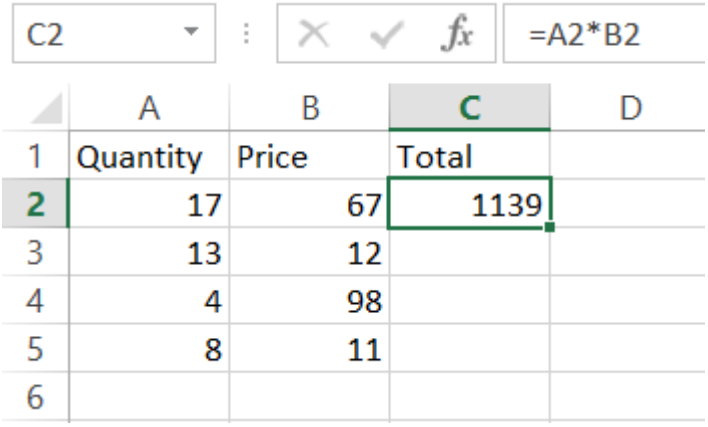
Q.2) How to Change the Reference from Relative to Absolute (or Mixed)?

There are three kinds of cell references that you can use in Excel:

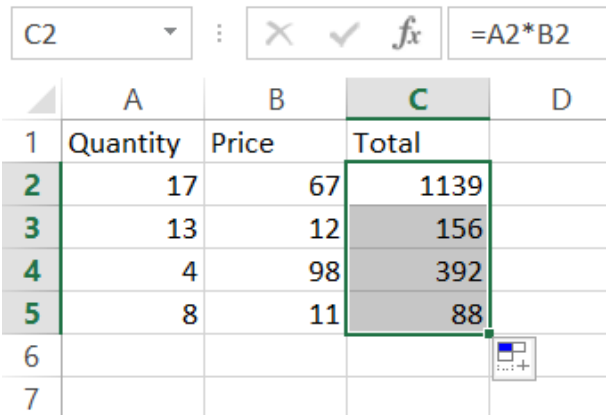
- Relative Cell References
- Absolute Cell References
- Mixed Cell References

Relative Cell References in Excel

Suppose you have data. To calculate the total for each item, we need to multiply the price of each item by the quantity of that item. For the first time we need to multiply the price of each item by the quantity of that item.
We will use the formula =A2*B2 and we get the total for the first row.



Now instead of entering all the cells one by one, we can simply copy cell C2 and drag it down and we automatically get the total of the rest of the cells.



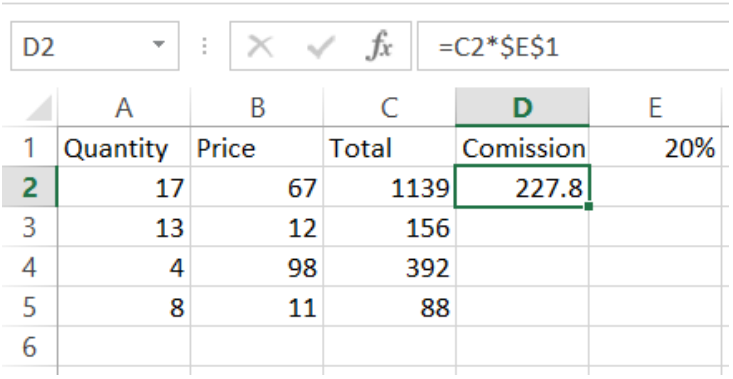
These cell references that adjust themselves when the cell is copied are called **Relative cell references in Excel.**

Relative cell references are useful when you have to create a formula for a range of cells and the formula needs to refer to a relative cell reference. In such cases, you can create the formula for one cell and copy-paste it into all cells.

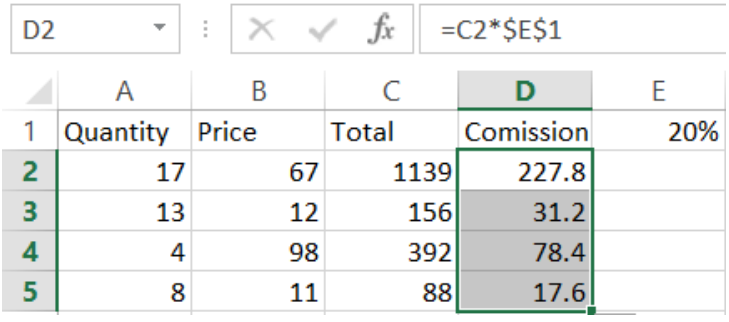
Absolute Cell Reference in Excel
Absolute cell references don't change when you copy the formula to other cells.

The commission is 20% and is listed in cell E1.

To get the commission amount for each item sale, use the following formula =C2*E1 in cell D2.



We can copy and drag to find the commission.



Absolute cell references are useful when you don't want the cell reference to change as you copy formulas. This could be the case when you have a fixed value that you need to use in the formula (such as tax rate, commission rate, number of months, etc.)

Mixed Cell References
Mixed cell references are a bit trickier than absolute and relative cell references.
There can be two types of mixed cell references:

- The row is locked while the column changes when the formula is copied.
- The column is locked while the row changes when the formula is copied.

Q.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.

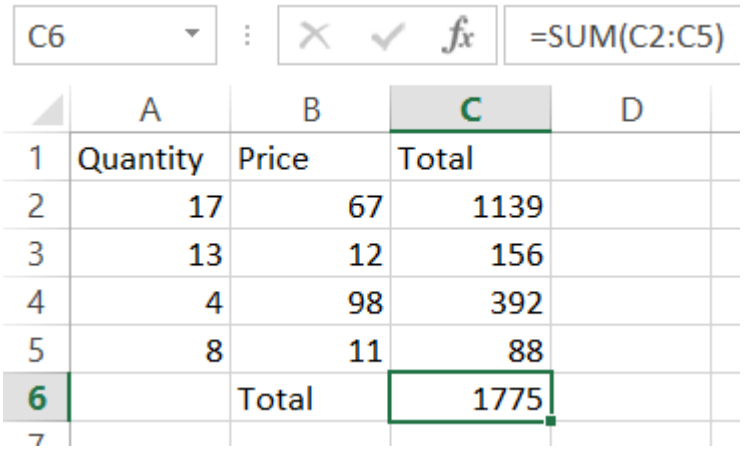
Order of Operations

Order	Symbols	Operation	Example
1	()	Parentheses	=(5-2)*4 = 12
2	: ,	Reference operators	=SUM(A1:A5)
3	-	Negation	=-3^2 = 9
4	%	Percent	=5%*100 = 5
5	^	Exponentiation	=5^2*2 = 50
6	* /	Multiplication and Division	=7-6/2 = 4
7	+ -	Addition and Subtraction	=6/2+1 = 4
8	&	Concatenation	="score: "&5+1 = score: 6
9	> < = <>	Logical comparisons	=3^2>5+3 = TRUE

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

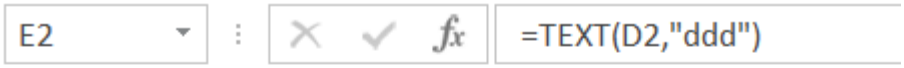
There are many functions in Excel but some of the important functions are as follows:

1) **SUM function:** The *sum* function is the most used function when it comes to computing data on Excel. This function works to sum up a group of numbers in a specific set of cells. This function is performed by typing the formula on the function bar and highlighting the cells you want to be summed before clicking Enter.
Syntax: The syntax formula for the* sum *function is "=SUM" (number1, number2, etc.).



	A	B	C	D
1	Quantity	Price	Total	
2	17	67	1139	
3	13	12	156	
4	4	98	392	
5	8	11	88	
6		Total	1775	

2) **TEXT function:** Text function is a useful tool that helps convert a date (or number) into a text string in a particular format. It falls in the category of string formulas that converts numerical values to a string. It is handy when users need to view numeric data in a readable format. Take note that the "TEXT" formula only works to convert numeric values to text. Therefore, its results cannot be calculated.
Syntax: The syntax formula for* text *function is "=TEXT" (value, format_text).

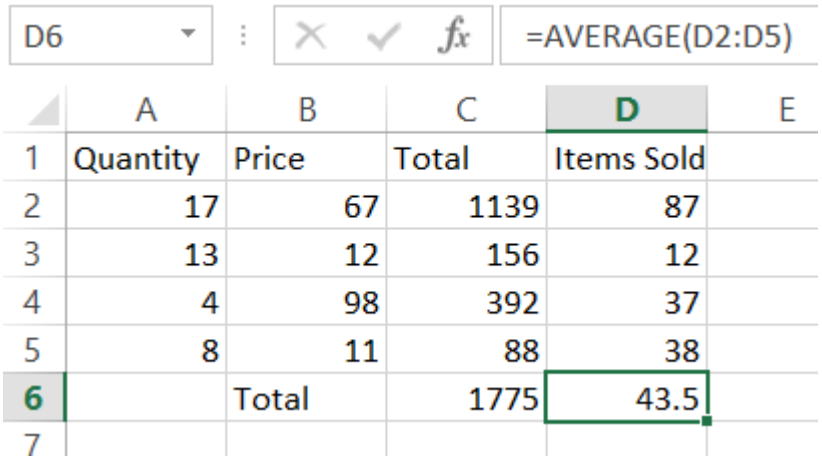


	A	B	C	D	E
1	Quantity	Price	Total	Date	Day
2	17	67	1139	02-02-2022	Wed
3	13	12	156	03-03-2022	Thu
4	4	98	392	09-04-2022	Sat
5	8	11	88	05-05-2022	Thu

3) **VLOOKUP function:** Users will find it useful when they need to find specific data on a large table. You can also use *VLookup* to search for names, phone number, or specific data on your sheet. Instead of manually looking for the names and wasting time scrolling through hundreds of data, the VLOOKUP function makes this process faster and more efficient.
Syntax: VLookup formula is "=VLOOKUP" (lookup_value, table_array, col_index_num, *range_lookup*).

- "lookup_value" is the data you want to find.
- "table_array" is the data column where you want to limit your search.
- "col_index_num" is the column number within the table that you want to return a value from.
- "range_lookup" is an optional argument that allows you to search for the exact match of your lookup value without sorting the table.

4) **AVERAGE function:** The *average* function is an extremely useful tool for getting the average value in a range of cells. Basically, the *average* function works to find the "arithmetic mean" for a group of cells. Aside from the *average* function, Excel also has the *median* and *mode* function.
Syntax: The syntax formula for the* average *function is "AVERAGE" (number1, number2, etc.).



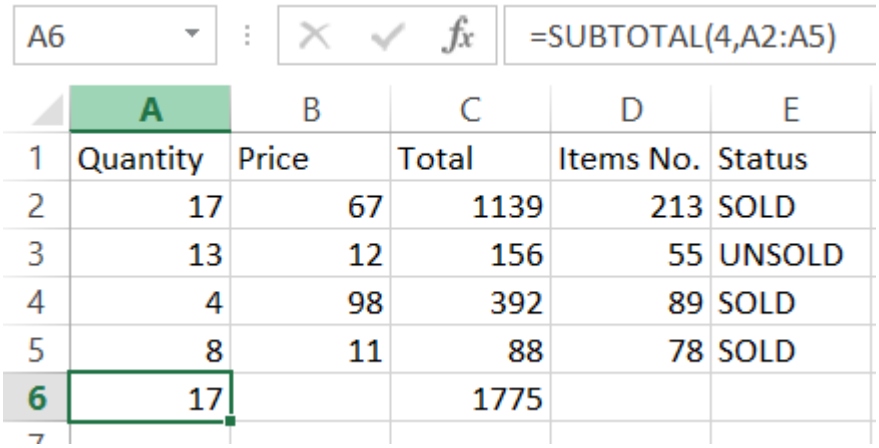
	A	B	C	D	E
1	Quantity	Price	Total	Items Sold	
2	17	67	1139	87	
3	13	12	156	12	
4	4	98	392	37	
5	8	11	88	38	
6		Total	1775	43.5	
7					

5) **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. In the latest version of Excel (2016), the *concatenate* function has been replaced with *concat* function and will be incorporated in more future versions of Excel.
Syntax: The syntax formula for the* concatenate *function is "CONCATENATE" (text1, [text2…text_n]),

	A	B	C	D	E	F
1	Quantity	Price	Total	Items No.	Status	CONCATE
2	17	67	1139	213	SOLD	Item No: 213 SOLD
3	13	12	156	55	UNSOLD	Item No: 55 UNSOLD
4	4	98	392	89	SOLD	Item No: 89 SOLD
5	8	11	88	78	SOLD	Item No: 78 SOLD
6		Total	1775			

Q.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.



	A	B	C	D	E
1	Quantity	Price	Total	Items No.	Status
2	17	67	1139	213	SOLD
3	13	12	156	55	UNSOLD
4	4	98	392	89	SOLD
5	8	11	88	78	SOLD
6	17		1775		

In the above sheet we have calculated the sub-total for Quantity with Max in Subtotal and we get answer 17. In the formula we can observe that we have assigned 4. It is the operation number. The number is different for different operations.

Q.6) What is the syntax of the vlookup function? Explain the terms in it?

In VLOOKUP function users will find it useful when they need to find specific data on a large table. You can also use VLOOKUP to search for names, phone number, or specific data on your sheet. Instead of manually looking for the names and wasting time scrolling through hundreds of data, the VLOOKUP function makes this process faster and more efficient.

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