The most powerful feature of excel is to be able to effortlessly perform mathematical calculations. The excel formulae universe is large; however, an analyst must know these basic commands that has been covered in this chapter.

FUNCTIONS

- In a spreadsheet application, values often need to be added, subtracted, multiplied and divided
- To allow for the fact that individual values might change, spreadsheet formulae generally refer not to actual values, but to the cells where those values are being held
- If values have been entered into A1 and A2, then A1+A2 will return an answer which will automatically recalculate if the value of A1 should change
- It is this automatic recalculation which makes spreadsheets invaluable
- Excel recognizes functions because they are preceded by an equals sign (=)
- You will find all of these mathematical operators ranged across the top and down the right hand side of the numeric keypad

BASIC MATHEMATICAL FUNCTIONS

Function	Sign
Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponentiation	^

LOGICAL FUNCTIONS – IF / AND / OR

IF

WHY YOU NEED TO KNOW THIS?

- Conditional comparisons are used in virtually all spreadsheets
- Knowing how to use IF in a nested manner and in combination with other functions will save hours of time

WHAT DOES IT DO?

- This function tests a condition
- If the condition is met it is considered to be TRUE
- If the condition is not met it is considered as FALSE
- Depending upon the result, one of two actions will be carried out

SYNTAX

- =IF(Condition,ActionIfTrue,ActionIfFalse)
- The Condition is usually a test of two cells, such as A1=A2
- ActionIfTrue and ActionIfFalse can be numbers, text or calculations

EXAMPLE

	B	C	D	E	F	G	H
3	Name	Sales	Target	Result			
4	Shekhar	1000	5000	Not Achieved	=IF(C4>=D4,"Achieved","Not Achieved")		
5	Gagan	6000	5000	Achieved	=IF(C5>=D5,"Achieved","Not Achieved")		
6	Bala	2000	4000	Not Achieved	=IF(C6>=D6,"Achieved","Not Achieved")		

AND

WHY YOU NEED TO KNOW THIS?

- Used with the IF function to enable more complicated logical comparisons

WHAT DOES IT DO?

- This function tests two or more conditions to see if they are all true
- It can be used to test that a series of numbers meet certain conditions
- It can be used to test that a number or a date falls between an upper and lower limit
- Normally the AND() function would be used in conjunction with a function such as =IF()

SYNTAX

- =AND(Test1,Test2)
- Note that there can be up to 30 possible tests
- When used by itself it will show TRUE or FALSE

EXAMPLE

	C	D	E	F	G
3	Items To Test		Result		
4	500	800	TRUE	=AND(C4>=100,D4>=100)	
5	500	25	FALSE	=AND(C5>=100,D5>=100)	
6	25	500	FALSE	=AND(C6>=100,D6>=100)	
7		12	TRUE	=AND(D7>=1,D7<=52)	

OR

WHY YOU NEED TO KNOW THIS?

- Used with the IF function to enable more complicated logical comparisons

WHAT DOES IT DO?

- This function tests two or more conditions to see if any of them are true
- It can be used to test that at least one of a series of numbers meets certain conditions
- Normally the OR() function would be used in conjunction with a function such as =IF()

SYNTAX

- =OR(Test1,Test2)
- Note that there can be up to 30 possible tests
- When used by itself it will show TRUE or FALSE

EXAMPLE

	C	D	E	F	G	H	I	J
3	Order No.	Cost	Payment Type	Handling Charge				
4	K1	1000	Cash	$0	=IF(OR(E4="Visa",E4="Mastercard"),5,0)			
5	K2	1000	Visa	$5	=IF(OR(E5="Visa",E4="Mastercard"),5,0)			
6	K3	2000	Cheque	$0	=IF(OR(E6="Visa",E4="Mastercard"),5,0)			
7	K4	5000	Mastercard	$5	=IF(OR(E7="Visa",E4="Mastercard"),5,0)			