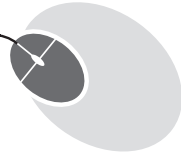




# Formulas and Functions with Excel 2013



## LEARNING OUTCOMES

**After the lesson, students will be able to:**

- » Use formulas to do calculations.
- » Use functions in a spreadsheet.
- » Create simple cell formulas.
- » Make cell references.

## WARM UP

Write down the various formulas of exponents and powers you have studied in mathematics.

**Ans.** Students can do this with the help of the teacher.

## CHAPTER NOTES

- » Microsoft Excel 2013 workbook lets you summarise values in related cells.
- » It makes it easy to reference a number of cells at once, letting you build your calculations quickly.
- » There are two basic ways to perform calculations in Excel: Formulas and Functions.
- » In Excel, a formula is an expression that operates on values in a range of cells or a cell.
- » Functions are predefined formulas in Excel. They eliminate laborious manual entry of formulas while giving them human-friendly names.



- » The SUM function usually aggregates values from a selection of columns or rows from your selected range.
- » The AVERAGE function finds the average of a given range, such as the average number of marks scored by the students of a class in a particular subject.
- » The COUNT function counts all the cells in a given range that contains only numeric values.
- » COUNTA counts all the cells in a given range. However, it counts the cells regardless of type. Unlike COUNT, which only counts numeric values, it also counts dates, times, strings, logical values, errors, empty strings or text.
- » The MAX and MIN functions help in finding the maximum number and the minimum number in a range of values.
- » A cell reference refers to the value of a cell or cell range on the current worksheet or a different worksheet within the spreadsheet.
- » A cell reference can be used as a variable in a formula. In one or several formulas, you can use a cell reference to refer to:
  - Data from one or more contiguous cells in the worksheet.
  - Data contained in different areas of a worksheet.
  - Data in other worksheets of the same workbook.
- » There are three types of cell references: relative, absolute and mixed reference.
- » By default, all cell references are relative references. When copied across multiple cells, they change based on the relative position of rows and columns.
- » Absolute references do not change when copied or filled.
- » You can use an absolute reference to keep a row and/or column constant.
- » An absolute reference is designated in a formula by the addition of the dollar sign (\$).
- » Sometimes, we need a combination of relative and absolute references, called mixed reference.

## DEMONSTRATION

- » Use formulas to do calculations
- » Use functions in a spreadsheet
- » Create simple cell formulas
- » Make cell references

## LAB ACTIVITIES

- » Create a worksheet with data of all the students of your class and their marks in three subjects: Hindi, English and Math. Use the AutoSum feature to total and calculate the percentage and average marks scored by each student.
- » Using different formulas, calculate the average height and weight of the students in your class. Determine the maximum, minimum and average height and weight.
- » Use the MAX function to find the largest number in a range.
- » Use the TODAY function to display today's date.
- » Name a sheet in Excel.

## ASSESSMENT

**Teacher can take a short oral quiz to test the students on the various formulas and functions used in Excel.**

## SUGGESTED CLASS ACTIVITIES

Find and circle any five Excel functions in the word grid given below. The words can be formed diagonally as well.

A	V	E	R	A	G	E	D	C
G	H	J	M	K	L	N	B	O
W	Q	R	O	Y	U	I	O	U
D	F	G	U	V	N	M	I	N
J	O	Y	S	T	I	A	K	T
K	J	R	E	U	N	X	C	A
L	L	A	B	K	M	A	R	T
T	O	U	C	H	P	A	D	Q
L	I	G	H	T	P	E	N	O