# Week 5: Toolbox

## Excel Terminology

**Lookup Functions**

**LOOKUP:** An Excel function which looks for a value in a single row or column and returns the value in the same position of another row or column.

**INDIRECT:** This function redirects Excel to another cell reference that has been constructed by a text string. E.g. If the number **2** is in cell **A1** and **A1** is typed in cell **B2**, then typing the formula **=INDIRECT(B2)** in a new cell will redirect Excel to the cell reference in **B2**, which is **A1**. The number **2** will be returned because this is the value in **A1**.

**ADDRESS:** An Excel function which returns the reference to a cell based on the row number and column number that you specify.

**ROW:** As a function, this will return the row number in which a particular cell is located.

**COLUMN**: As a function, this will return the column number in which a particular cell is located.

**OFFSET:** This Excel function will give as an output a cell or range of cells lying a specified number of rows and columns away from an original cell or range of cells.

## Ninja Tips

The **OFFSET** Excel function can be used in the arguments of other Excel functions in place of an ordinary cell reference. For example, you can sum the values in the array **B3:D4** by using **=SUM(OFFSET(A1,2,1,2,3))** instead of **=SUM(B3:D4)**.

When inserting or deleting a row or column, your Excel formulas will automatically change but you may not want them to. The **INDIRECT** Excel function is useful for overcoming this problem. For example, if you want to sum the array **C2:D3**, regardless of row/column insertions/deletions, use **=SUM(INDIRECT("C2:D3"))** instead of **=SUM($C$2:$D$3)**.

The **LOOKUP** function requires the values that are being looked up to be in ascending order, or else the wrong value may be returned.