ECDL Module 4

Spreadsheets

Windows Vista / Microsoft Office 2007 Edition – Syllabus Five





ECDL Foundation Approved Courseware



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Tutor Setup Information

- Copy the sample files folder to the **Documents** folder on the PC.
- At the end of the course, remove all files modified or created during the course, prior to re-running the course.
- At the end of the course, reset all program and operating system defaults that may have been modified during the course, prior to re-running the course.

A first look at Excel 2007

Starting the Excel program

 Click on the Start button (bottom-left of the screen). Click on All Programs. Click on Microsoft Office. Click on Microsoft Office Excel 2007. The Excel window will be displayed, as illustrated.

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-																
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What is the Active Cell?

• Excel identifies the **active cell** with a bold outline around the cell and highlighting the column heading letter and row heading number of the cell. In the following example, **B2** is the active cell:

B2		-	- (•)+2
	А	В	С	D	E
1					
2		2002			
3					
4					

- In the above illustration, notice that **B2** is displayed in the **Name Box**, and the contents of the cell is displayed in the **Formula Bar**. In this case, **2002** is a calculated value, **2000+2**.
- In order for you to enter data into a cell, it needs to be the active cell. The active cell will accept keyboard entries. You can make a cell active by clicking on it or navigating to it.

The Excel cell referencing system

• An Excel worksheet is made up of individual cells, each of which had a unique reference. Look at the illustration below. We have clicked on cell **B3**, which means that the cell is in **column B**, **row 3**.

	B3	•	(j
	А	В	С	
1				
2				
3				
4				
5				

In the illustration below, we have clicked on cell **D2**.

	D2	•		f_{x}	
	А	В	С	D	
1					
2					
3					

If you look carefully you will see that the current cell reference is displayed just above the actual worksheet.

Entering numbers and text

• Click on cell **B2**, as illustrated.

	B2	•	(f _x	
	А	В	С	D	
1					
2					
3					
4					

• Type in the word '**Region**'. Press the **Enter** key. When you press the **Enter** key you will automatically drop down to the next cell within the worksheet. Your screen will now look like this.

	B3	•	0	f_{x}	
	А	В	С	D	
1					
2		Region			
3					

- The active cell is now **B3**. Type in the word '**North**'. Press the **Enter** key.
- The active cell is now **B4**. Type in the word '**South**'. Press the **Enter** key.

- The active cell is now **B5**. Type in the word '**East**'. Press the **Enter** key.
- The active cell is now **B6**. Type in the word '**West**'. Press the **Enter** key.

Your screen will now look like this:

	H13	•		f _x
	А	В	С	D
1				
2		Region		
3		North		
4		South		
5		East		
6		West		
7				

- Click on cell C2. Type in the word 'Sales'. Press the Enter key.
- Type in the number **10488** and press the **Enter** key.
- Type in the number **11973** and press the **Enter** key.
- Type in the number **13841** and press the **Enter** key.
- Type in the number **16284** and press the **Enter** key.

Your screen will now look like this:

	C14	•	• (•	f _*
	А	В	С	D
1				
2		Region	Sales	
3		North	10488	
4		South	11973	
5		East	13841	
6		West	16284	
_				

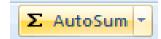
Default text and number alignment

• If you look carefully at what you have typed in you will see that by default text is aligned within a cell to the left, while numbers are aligned within the cell to the right. This makes sense, as normally text starts from the left of a page and it is the same within a cell. Numbers on the other hand normally align to the right. Think how you would write down a column of numbers on a page that you want to add up. Numbers align to the right.

Summing a column of numbers

- Click on cell **B7** and type in the word 'Total'.
- Click on cell **C7**. Click on the **Formulas** tab, and then click on the **AutoSum** button.

	- 1 7 -	(" -) =				
	Home	Insert	Page Layout	Formulas	Data	R
fr	Σ Auto	Sum -	👰 Logical *	🕵 Lookup &	& Referenc	e 🔻
Jx Insert	🔂 Rece	ntly Used *	🚺 Text 🔹	🔞 Math & 1	ſrig *	
Function	🍺 Finar	ncial *	👘 Date & Time 🖲	🖞 🎁 More Fui	nctions *	
			Function Library			



Your screen will look like this:

	SUM	-	• (• 🗙 🗸	$f_{\mathcal{K}}$	=SUN	1(C3:C6)
	А	В	С		D	E
1						
2		Region	Sales			
3		North	10488			
4		South	11973			
5		East	13841			
6		West	16284			
7		Total	=SUM(C3:0	C6)		
8			SUM(num	ber1	, [numb	er2],)

• Press the **Enter** key and Excel will automatically add up the column of numbers, as illustrated.

	C8	•	• (•	f_{x}
	А	В	С	D
1				
2		Region	Sales	
3		North	10488	
4		South	11973	
5		East	13841	
6		West	16284	
7		Total	52586	
8				

• We have hardly started to use Excel but already you have seen how powerful and easy to use it is. We will see more of the Excel functions for performing calculations later.

The best thing about Excel is that if you make changes to the numbers then totals and other calculations are automatically updated. Click on cell **C4** and type in a different number. When you press the **Enter** key you will see that the total value displayed in cell **C7** changes to recalculate the total values of the sales.

Entering a date

 Click on cell A1. Enter the following information and then press the Enter key.

2/2/2008

Excel recognises this as a date and automatically marks the cell as containing date information.

• Right click over the date you have just entered. From the popup menu displayed, select the **Format Cells** command, as illustrated.

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	Clipboard	Calit	bri v	11 -	For	<u>nt</u> \$ - %	/。,			Alignmen	t
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	А	_	1 =		<u> </u>	1 .00	÷.ŏ ≞	1	F	G	
1	2/02/200		C .4								
2		*	Cu <u>t</u>								
3		Ð	<u>C</u> opy	/							
4		2	<u>P</u> aste	2							
5			Paste	e <u>S</u> pecial							
6			Inser	t							
7			Dele								
8			_								
9			Clea	r Co <u>n</u> tent	S			_			
10			Filt <u>e</u>	r				•			
11			S <u>o</u> rt					•			
12		1	Inser	t Co <u>m</u> mei	nt						
13			Form	nat Cells							
14			Pic <u>k</u>	From Dro	p-down	List					

• This will display the Format Cells dialog box.

Format Cells	? 🔀
Number Alignment	Font Border Fill Protection
Category: General Number Currency Accounting Date Time Percentage Fraction Scientific Text Special Custom	Sample 2/02/2008 Type: *14/03/2001 *Wednesday, 14 March 2001 14/03/2001 14/03/01 14/3/01 14/3/2001 14/3/2001 14/03/01 Locale (location): English (Australia)
begin with an asterisk (*)	e and time serial numbers as date values. Date formats that respond to changes in regional date and time settings that are g system. Formats without an asterisk are not affected by s.
	OK Cancel

• If you have time you can select a different type of date format, using the **Type** section of the dialog box. Press the **OK** button to apply any changes you make.

Worksheets and Workbooks

 Look at the bottom-left of your screen and you will see the worksheet tabs displayed.

23				
	▶ Sh	eet1 She	et2 / She	et3 🤇 🞾
Ready	2			

By default each workbook contains three worksheets. This is similar to a notebook that contains separate pages. Click on the **Sheet 2** worksheet tab and the second worksheet is displayed. Click on the **Sheet 3** worksheet tab and the third worksheet is displayed. Click on the **Sheet 1** worksheet tab and the first worksheet, containing your data is displayed again. As we will see later you can add or remove worksheets as well as reordering and renaming them.

Saving a workbook

• To save the workbook click on the **Save** icon (top-left part of your screen).



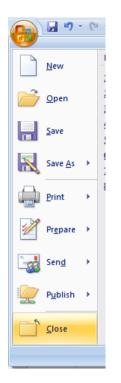
This will display the **Save As** dialog box.

Save As							?	×
Save in:	📋 My Docum	nts	*	٠		×	1	•
My Recent Documents	Cyberlink InstantCDD My Data So My eBooks My Pictures My Practice My Practice My Receive My Skype O My Skype O My Skype P My Videos My V	ces iles Files ntent tures						
	File <u>n</u> ame:	ook1.xlsx			*			
	Save as <u>t</u> ype:	ixcel Workbook (*.xlsx)			*			
Too <u>l</u> s 🔻				<u>S</u> av	,		Cancel	

- Click on the **down arrow** next to the **Save in** section of the dialog box to navigate to the folder containing your sample files.
- Click within the **File name** section of the dialog box to name the file. In this case use the file name **My First Spreadsheet**.
- Click on the **Save** button the save the file to disk.

Closing a workbook

• To close the workbook, click on the **Office Button** (top-left of your screen), from the drop down options displayed, click on the **Close** command.



• The screen will now look like the illustration below. The Excel program is open but no workbook is displayed within the program.

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• To close the Excel program, click on the **Close** icon. This icon is the small cross displayed at the top right of the Excel screen.



Creating a new workbook

- Start the Excel program. Each time you start the Excel program, by default, it displays a new blank workbook containing three blank worksheets. Type in your **First Name** in to cell **A1**.
- To create a new workbook, press **Ctrl+N**. This is the keyboard shortcut for creating a new file. A new workbook will be created containing three worksheets. Type in your **Second Name** in to cell **A1**.
- Close both workbooks without saving your changes.

Opening a workbook

• Press Ctrl+O the keyboard shortcut to open an existing file.

Or click on the **Microsoft Office Button** (top-left) and then click on the **Open** command.



- This will display the Open dialog box. Click on the down arrow within the Look in section of the dialog box and navigate to the folder containing your sample files. Select a file called Sales 2005, and then click on the Open button to open the workbook.
- Open the workbook called Sales 2006 and also a workbook called Sales 2007. You now have three open workbooks.

Switching between workbooks

 To switch to a particular Excel workbook, click on the relevant Excel workbook icon displayed within the Windows Taskbar (across the bottom of the screen).

🛃 start	Sales 2005.xlsx	Sales 2006.xlsx	Sales 2007.xlsx	
---------	-----------------	-----------------	-----------------	--

TIP: You can use the **Alt+Tab** keyboard shortcut to switch between open programs.

• Close all open workbooks.

Saving a workbook using another name

• Open the workbook called **Sales 2005**. Click on the **Microsoft Office Button** and the select the **Save As** command.



• In the **File name** section enter a new file name, in this case called **My Backup**. Click on the **Save** button. You now have two copies of the same file, both containing the same information. This can be useful for making backups of your data or for retaining copies of a workbook with different versions of the data in each file.

Saving a workbook using a different file type

• Click on the Microsoft Office Button and the select the Save As command. The Save As dialog is displayed. Click on the down arrow within the Save as type section of the dialog box. You can select the required file type from the drop down displayed.

	File <u>n</u> ame:	Sales 2005.xlsx	*
	Save as <u>t</u> ype:	Excel Workbook (*.xlsx)	*
Too <u>l</u> s •		Excel Workbook (*.xlsx) Excel Macro-Enabled Workbook (*.xlsm) Excel Binary Workbook (*.xlsb) Excel 97-2003 Workbook (*.xls)	
		XML Data (*.xml) Single File Web Page (*.mht; *.mhtml)	~

TIP: If you want to email a copy of an Excel 2007 workbook to someone that has an earlier version of Excel, such as Excel 2003, then you may need to save the file in the **Excel 97-2003 Workbook** file format.

Alternatively, people with earlier versions of Excel can download additional free software from Microsoft allowing them to open and view (but not necessary edit), files created using Excel 2007.

Other file type options include:

Text file:

Saving your worksheet as a plain text file will remove all the formatting you have added to your worksheet (such as bold, italics & underlining). It will also remove any pictures or other features such as tables. Only plain text will be saved. Be very careful about using this option.

-					
		File <u>n</u> ame:	Book1.xlsx	~	
		Save as <u>t</u> ype:	Excel Workbook (*.xlsx)	~	
	Tools •	· 	Excel Template (*.xltx) Excel Macro-Enabled Template (*.xltm) Excel 97-2003 Template (*.xlt) Text (Tab delimited) (*.txt)		Cancel
			Unicode Text (*.txt) XML Spreadsheet 2003 (*.xml)	~	

Template:

You normally save a workbook as a workbook file. You can however save a workbook as a template. This means that you can create new workbooks in the future, based on the templates you create.

	File <u>n</u> ame:	Book1.xlsx	*	
	Save as <u>t</u> ype:	Excel Workbook (*.xlsx)	*	
Tools •		Single File Web Page (*.mht; *.mhtml) Web Page (*.htm; *.html) Excel Template (*.xltx)	^	Cancel
		Excel Macro-Enabled Template (*.xltm) Excel 97-2003 Template (*.xlt)	-	
		Text (Tab delimited) (*.txt)	~	

CSV file:

This saves table data in a form that can be used by other programs. It is short for **Comma Separated Value**.

-				
	File <u>n</u> ame:	Book1.xlsx	¥	
	Save as <u>t</u> ype:	Excel Workbook (*.xlsx)	*	
Tools 🔹		Text (M5-DOS) (*.txt) CSV (Macintosh) (*.csv) CSV (M5-DOS) (*.csv) DIF (Data Interchange Format) (*.dif)	Cancel	
		SYLK (Symbolic Link) (*.slk) Excel Add-In (*.xlam)	~	

• Close any open dialog boxes and close all open worksheets.

Help

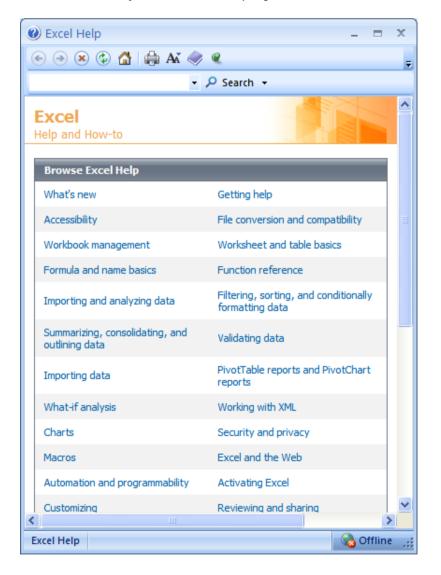
Getting help

• Click on the **Microsoft Office Excel Help** icon (towards the top-right of the screen).



TIP: Or press the **F1** help key.

• The **Excel Help** window is displayed.



 As you can see a wide range of help topics are displayed. Click on the What's new link. You will see the following.

Excel Help	_ = X	
💽 🥯 🛞 🕼 🚔 🗛 🧼 🍳		Ŧ
- 🔎 Search -		
Excel	1	
What's new		
Topics in "What's new"	4 items	
What's new in Microsoft Office Excel 2007		
② Excel specifications and limits		
Terms of use		
Ø Disclaimer: Use of Fictitious Names		
Excel Help	S Offline	-

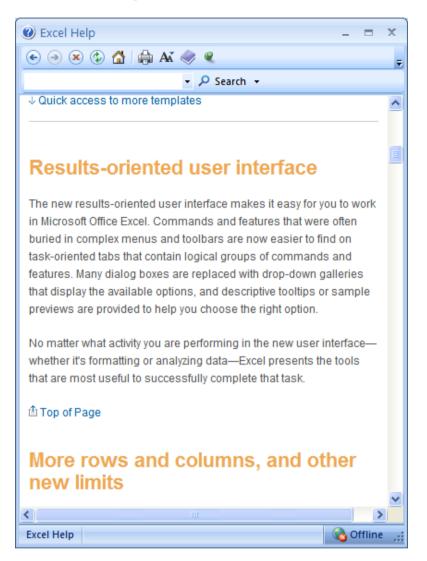
• Click on the **What's new in Microsoft Office Excel 2007** link. You will see the following.



TIP: Click on the Maximise button within the top-right part of the dialog

box. This will make the dialog box fill the screen and the information within it will be easier to read.

• Spend a little time browsing what's new within this version of Excel. For instance if you click on the **Results Orientated User Interface** link you will see the following.



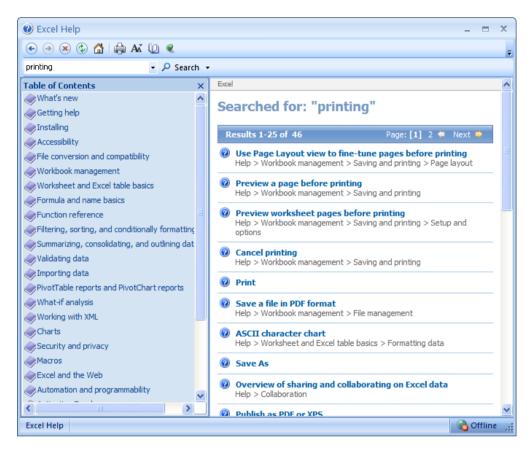
• When you have finished experimenting, close the **Excel Help** window.

Searching for Help

• You can search for help on a topic of particular interest. Press **F1** to display the **Excel Help** window. Within the text box near the top of the Excel Help window, type in a word or words relating to the help you need. For instance, to display help about printing, type in the word '**printing**'

🕐 Excel Help	
🔄 🦻 🛎 😳 🚮 🚔 Aĭ	۵ و
Printing	🝷 🔎 Search 👻

 Click on the Search button next to the text input box. You will see a range of topics related to printing. Clicking on any of these topics will display more information about printing.



• Close the **Excel Help** window when you have finished experimenting.

The Help 'Table of Contents'

• Press **F1** to display the Excel Help window. Click on the **Table of Contents** icon (the book icon displayed within the Excel Help window toolbar).



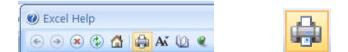


• You will now see a Table of Contents displayed down the left side of the Excel Help window.

🕑 Excel Help		_ = X
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→ P Search		
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Printing a Help topic

• Display an item of interest within the Excel Help window. Click on the **Print** icon displayed within the Excel Help toolbar.



• Close all open dialog boxes before continuing.

Alt key help

- Press CTRL+N to open a new blank workbook
- Click on the **Home** tab.
- Press the **Alt** key and you will see numbers and letters displayed over icons, tabs or commands, towards the top of your screen.



- If you type in a number or letter you will activate a command. For instance in the example shown, the number 1 is displayed over the Save icon. Type in 1 and you will see the Save As dialog box displayed. Close this dialog box.
- Press the Alt key again and you will see an N displayed over the Insert tab.
 Pres N and you will see the contents of the Insert tab displayed.
- This is a very easy way of learning keyboard shortcuts. You now know that Alt+S will display the Save As dialog box and that Alt+N will display the Insert Tab.
- Click on the **Home** tab before continuing.

Using Excel 2007

Selection techniques

Why are selection techniques important?

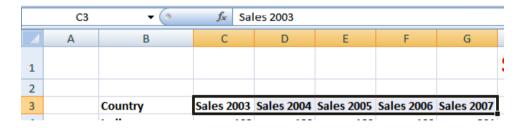
• Often when you want to do something within Excel you need to select an item first. This could involve selecting a cell or multiple cells. It many need you to select a row, a column or even the entire table.

Selecting a cell

• Open a workbook called **Selection techniques**. To select a cell simply click on that cell. Thus to select cell **B3**, click on cell **B3**.

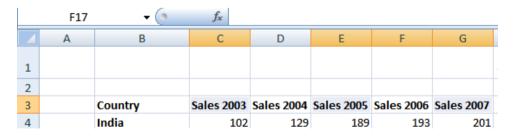
Selecting a range of connecting cells

We want to select the cells from C3 to G3. To do this click on the first cell within the range, i.e. C3. Then press down the Shirt key (and keep it held down). Click on cell G3. When you release the Shift key the cell range will remain selected, as illustrated.



Selecting a range of non-connecting cells

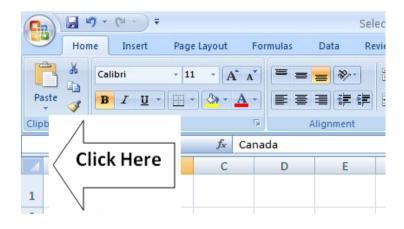
• Sometimes we need to select multiple cells that are not next to each other, as in the example below, where C3, E3 and G3 have been selected.



To do this click on the first cell, i.e. **C3**. Then while keeping the **Ctrl** key pressed click on the cells **E3** and **G3**. When you release the **Ctrl** key the cells will remain selected.

Selecting the entire worksheet

• To select the entire worksheet, click on the intersection between the column and row referencing numbers.



Selecting a row

• To select a row, say the row relating to Canada, click on the relevant row number displayed down the left side of the worksheet.

2						
3	Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4	India	102	129	189	193	201
5	 Canada	98	120	121	132	143
6	USA	109	110	109	102	94
7	United Kingdom	92	99	98	95	85
8	Australia	92	95	96	92	93
9	New Zealand	32	43	54	74	84
10	China	67	79	83	88	93
11	Pakistan	24	34	43	54	73
12	Mexico	12	24	20	23	32

Selecting a range of connecting rows

• To select the rows relating to Canada, USA, UK and Australia. First click on the row number next to **Canada** (i.e. **5**). Press down the **Shift** key and keep it pressed. Click on the row number relating to **Australia** (i.e. **8**). When you release the **Shift** key the multiple rows remain selected.

~						
3	Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4	India	102	129	189	193	201
5	Canada	98	120	121	132	143
6	USA	109	110	109	102	94
7	United Kingdom	92	99	98	95	85
8	Australia	92	95	96	92	93
9	New Zealand	32	43	54	74	84
10	China	67	79	83	88	93

Selecting a range of non-connected rows

• Click on the row number **3** and press down the **Ctrl** key. Click on row number **5**, then row number **7** and finally number **9**. Release the **Ctrl** key and the rows will remain selected.

2						
3	Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4	India	102	129	189	193	201
5	Canada	98	120	121	132	143
6	USA	109	110	109	102	94
7	United Kingdom	92	99	98	95	85
8	Australia	92	95	96	92	93
9	New Zealand	32	43	54	74	84
10	China	67	79	83	88	93

Selecting a column

• To select the column containing data relating to **2003**, click on the column header C, as illustrated.

	А	В	С	D	E	F	G	
								1
1								1
2								
3		Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007	
4		India	102	129	189	193	201	
5		Canada	98	120	121	132	143	
6		USA	109	110	109	102	94	
7		United Kingdom	92	99	98	95	85	
8		Australia	92	95	96	92	93	
9		New Zealand	32	43	54	74	84	
10		China	67	79	83	88	93	
11		Pakistan	24	34	43	54	73	
12		Mexico	12	24	20	23	32	
13								

Selecting a range of connecting columns

To select the columns relating to the sales figures for 2003-2006, first select column C. Press the Shift key and while keeping it pressed select column F. When you release the Shift key the columns will remain selected.

	А	В	С	D	E	F	G	
1								S
2								
3		Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007	
4		India	102	129	189	193	201	
5		Canada	98	120	121	132	143	
6		USA	109	110	109	102	94	
7		United Kingdom	92	99	98	95	85	
8		Australia	92	95	96	92	93	
9		New Zealand	32	43	54	74	84	
10		China	67	79	83	88	93	
11		Pakistan	24	34	43	54	73	
12		Mexico	12	24	20	23	32	

Selecting a range of non-connecting columns

To select the columns relating to 2003, 2005 and 2005, first select the column C. Press the Ctrl key and keep it pressed. Select column E and then select column G. Release the Ctrl key and the columns remain selected.

	А	В	С	D	E	F	G
1							
2							
3		Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
6		USA	109	110	109	102	94
7		United Kingdom	92	99	98	95	85
8		Australia	92	95	96	92	93
9		New Zealand	32	43	54	74	84
10		China	67	79	83	88	93
11		Pakistan	24	34	43	54	73
12		Mexico	12	24	20	23	32

• Close the workbook without saving any changes you may have made.

Good practice when creating or editing lists

- Each cell should contain the smallest data element. For instance if you are storing a person's name, use one cell for the first name and another cell for the second name. This means that at a later date you could manipulate the data to sort by the second name. For the same reason split the details of an address into as many smaller parts as possible so that later you could search by state/region, by post code/zip code or even by country if you are maintaining an international list.
- The top row of your data will often contain the headers of each column. These are called field names.

- List should not contain blank rows or columns within the data. This can cause problems when later sorting your data.
- Ensure that cells bordering your list are blank.
- If your data contains the bottom row which contains totals, it is often a good idea to insert a blank line above the row of totals.

Manipulating rows and columns

Inserting rows into a worksheet

• Open a workbook called **Rows and columns**. We need to insert a row for **Japan** between the row for **Canada** and the row for the **USA**. Select the row for the **USA**, as illustrated.

4	india	102	129	189	193	201
5	Canada	98	120	121	132	143
6	USA	109	110	109	102	94
7	United Kingdom	92	99	98	95	85
8	Australia	92	95	96	92	93

• Right click over the selected row and from the popup menu displayed select the **Insert** command.

-				
6	USA	109	V	C.4
7	United Kingdom	92	6	Cu <u>t</u>
8	Australia	92	1	<u>C</u> opy
9	New Zealand	32	E	<u>P</u> aste
10	China	67		Paste <u>S</u> pecial
11	Pakistan	24		Insert
12	Mexico	12		Delete
13				Clear Contents
14				

• The table will now look like this.

3		Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007	
4		India	102	129	189	193	201	
5		Canada	98	120	121	132	143	
6								
7	1	USA	109	110	109	102	94	
8		United Kingdom	92	99	98	95	85	
-								

• Click on cell **B6** and type in the word '**Japan**'. Enter the following sales figures for **Japan**.

Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
India	102	129	189	193	201
Canada	98	120	121	132	143
Japan	89	93	102	109	120

Inserting columns into a worksheet

• We want to insert a column for sales figures in 2002, which needs to be inserted before the **2003** column. Select the column relating to **2003**, as illustrated.

	А	В	С	D	E	F	G
1							
2							
3		Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
-							
6		Japan	89	93	102	109	120

• Right click over the selected column and from the popup menu displayed select the **Insert** command. The column will be inserted, as illustrated.

	А	В	С	D	E	F	G	Н	Γ
1				Ī					1
2									Ē
3		Country		Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007	
4		India		102	129	189	193	201	
5		Canada		98	120	121	132	143	
6		Japan		89	93	102	109	120	

• Enter the following data into the column.

	А	В	С	D	E	F	G	Н
1								
2								
3		Country	Sales 2002	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
4		India	93	102	129	189	193	201
5		Canada	89	98	120	121	132	143
6		Japan	74	89	93	102	109	120
7		USA	92	109	110	109	102	94
8		United Kingdom	86	92	99	98	95	85
9		Australia	84	92	95	96	92	93
10		New Zealand	23	32	43	54	74	84
11		China	54	67	79	83	88	93
12		Pakistan	23	24	34	43	54	73
13		Mexico	10	12	24	20	23	32

Deleting rows within a worksheet

• Select the row relating to **Canada**. Right click over the selected row and from the popup menu displayed select the **Delete** command.

4	· · · ·	-	aiu		Z 1Z:	1
5	<u> </u>	v	Cu <u>t</u>	78	3 120)
6		e B	-		9 93	3
7			<u>C</u> opy		9 110)
8		2	<u>P</u> aste		2 99)
9			Paste <u>Special</u>		2 93	5
10			Insert		2 43	3
11			<u>D</u> elete		7 79)
12			Clear Contents	4	1 34	1

• The row is deleted without any additional warning.

TIP: To delete multiple connected rows, just the **Shift** key trick to select multiple rows and then right click to delete the rows. To delete multiple non-connected rows, use the **Ctrl** key trick to select the multiple rows and then right click to delete the rows.

Deleting columns within a worksheet

• Select the column relating to **Sales 2007**. Right click over the selected column and from the popup menu displayed select the **Delete** command. The column is deleted without any additional warning.

TIP: To delete multiple connected columns, use the **Shift** key trick to select multiple columns and then right click to delete the columns. To delete multiple non-connected columns, use the **Ctrl** key trick to select the multiple columns and then right click to delete the columns.

Modifying column widths

• Select a column, such as the **Country** column. Right click over the selected column and from the popup menu displayed select the **Column Width** command.

4						
3	Country	¥	Cu <u>t</u>)4	Sales 2005	Si
4	India		<u>С</u> ору	29	189)
5	Japan	2	<u>P</u> aste	93	102	!
6	USA		Paste Special	10	109	
7	United K		Insert	99	98)
8	Australia		-	95	96	j
9	New Zea		<u>D</u> elete	43	54	Ļ
10	China		Clear Contents	79	83)
11	Pakistan	2	<u>F</u> ormat Cells	34	43	1
12	Mexico		<u>C</u> olumn Width	24	20	
13			<u>H</u> ide			
14			Unhide			
15		_	_			

• The **Column Width** dialog box is displayed which allows you to set the column width. Click on the **Cancel** button to close the dialog box.

Column Width 🛛 ? 🔀					
<u>C</u> olumn width:	14.86				
ОК	Cancel				

Modifying column widths using 'drag and drop'

• Move the mouse pointer to the line between the header for **column B** and **column C**, as illustrated below.

			· · · · · · · · · · · · · · · · · · ·		
	А	В		С	
1			4		
2					
3		Country		2003	Sale
4		India		93	

• Press the mouse button and keep it pressed.

The pointer changes to a black cross with double arrows when placed on the line between two columns.

• Move the mouse pointer left or right to make the column narrower or wider. Release the mouse button and the column width will change as required.

Automatically resizing the column width to fit contents

• Resize all the columns so that they are too narrow to properly display the data contained within the columns. Your screen will look similar that the illustration below.

	А	В	С	D	E	F	G	Н	
1									S
2									
3		Country	Sales 2	Sales 200	Sales	Sales 2	Sales 20	Sales 20)07
4		India	93	102	129	189	193	201	
5		Japan	74	89	93	102	109	120	
6		USA	92	109	110	109	102	94	
7		United King	86	92	99	98	95	85	
8		Australia	84	92	95	96	92	93	
9		New Zealar	23	32	43	54	74	84	
10		China	54	67	79	83	88	93	
11		Pakistan	23	24	34	43	54	73	
12		Mexico	10	12	24	20	23	32	

• To automatically resize each column width to fit the contents, select all the columns containing data. Double click on the junction between one of the column header headers within the selected columns.

Modifying row heights

• Select one or more rows and then right click over the selected row(s). From the popup menu displayed select the **Row Height** command.

X	Cut
-	
6	<u>C</u> opy
	<u>P</u> aste
	Paste <u>S</u> pecial
	Insert
	Delete
	Clear Co <u>n</u> tents
1	Format Cells
	Row Height
	<u>H</u> ide
	<u>U</u> nhide

 The Row Height dialog is displayed allowing you to set the exact row height, as required.

Row Height	? 🛛
<u>R</u> ow height:	15
ОК	Cancel

TIP: If you click between any two row headers, you can drag the row height up or down as required, to modify the row height.

• Save your changes and close the workbook.

Manipulating cells and cell content

Copying a cell or range contents within a workbook.

- Open a workbook called Copying moving and deleting.
- Select a cell, range, row or column to copy. In this case select the range **B4** to **E4**.

TIP: A range like this is often written as **B4:E4**.

Your screen will look something like this:

	А	В	С	D	E
1	Stoc	k Levels			
2					
3					
4		Component number	No in stock	Value each item	Total value in stock
5		100846	2	56.99	113.98

• Press **Ctrl+C** to copy the selected range to the Clipboard.

TIP: To copy a selected item to the Clipboard, click on the **Home** tab and then click on the **Copy** icon in the **Clipboard** group on the **Ribbon**.



Click at the location you wish to paste the data to. In this case click on cell B14 and press the Ctrl+V keys to paste the data from the Clipboard.

TIP: To copy a selected item to the Clipboard, click on the **Home** tab and then click on the **Paste** icon, in the **Clipboard** group on the **Ribbon**.



5				
4	Component number	No in stock	Value each item	Total value in stock
5	100846	2	56.99	113.98
6	100332	0	28.38	0
7	100622	5	12.74	63.7
8	100847	2	32.99	65.98
9	100743	5	18.99	94.95
10	100934	1	12.99	12.99
11				
12				
13				
14	Component number	No in stock	Value each item	Total value in stock

• Your data will now look like this.

TIP: You can use the same technique to copy entire rows or columns.

Pressing **Ctrl+A** will select everything within a worksheet and allow you to copy the entire worksheet contents to the Clipboard when you press **Ctrl+C**.

Deleting cell contents

• Select the range that you wish to delete the contents of. In this case select the range **B10:E10**, as illustrated.

9	100743	5	18.99	94.95
10	100934	1	12.99	12.99
11				

• Press the **Del** key and the cell contents will be deleted.

TIP: You can use the same technique to delete entire rows or columns. Pressing **Ctrl+A** will select everything within a worksheet will allow you to delete the entire worksheet contents when you press the **Del** key.

Moving the contents of a cell or range within a workbook

• Select the range to wish to move and then cut it to the Clipboard. In this case select the data, as illustrated.

Component number	No in stock	Value each item	Total value in stock
100846	2	56.99	113.98
100332	0	28.38	0
100622	5	12.74	63.7
100847	2	32.99	65.98
100743	5	18.99	94.95

 Press the Ctrl+X keys to cut the selected data to the Clipboard. Click at the location you wish to move the selected data to, in this case click in cell B15, and press Ctrl+V, to paste the data.

TIP: You can use the same technique to move entire rows or columns.

• Save your changes and close the workbook.

Editing cell content

- It is easy to edit existing data within a cell or to replace existing data within a cell. Open a workbook called **Editing**.
- Click on cell **B3**. Double click in front of the word '**Region**' and insert the word '**Sales**' followed by a space. Press the **Enter** key to commit your changes to the cell.
- Click on cell **B7**. Double click on the word 'West', to select it and then over type the selected word with the word 'Central'. Press the Enter key to commit your changes to the cell.

Undo and Redo

• Click on the **Undo** icon (top-left of your screen) to reverse the last action. Try it now.



 Click on the **Redo** icon (top-left of your screen) to reapply the last action. Try it now.



• Save your changes and close the workbook.

Copying the contents of a cell or range between worksheets (within the same workbook)

- Open a workbook called Worksheet manipulation.
- Select a cell, range, row or column to copy. In this case select the range **B3:C8**. Your screen will look something like this:

	B3	- (•	∫∗ Region		
	А	В	С	D	E
1	2007				
2					
3		Region	Sales		
4		Europe	727,463		
5		Africa	343,745		
6		Asia	283,174		
7		Australia	287,636		
8		America	831,173	ļ	
9					

 Press Ctrl+C to copy the selected range to the Clipboard. Click on the second worksheet tab (called Projections).

22			
22 4 ↓ ▶	▶ 2007 S	ales Projection	s 👌
Ready			

You will now see the contents of the second, empty worksheet displayed.

Click at the location you wish to paste the data to. In this case click on cell C4 and press the Ctrl+V keys to paste the data from the Clipboard. You have successfully copied selected data from one worksheet to another worksheet within the same workbook.

BEFORE CONTINUING: Click on the Undo icon to undo this copy.

The **Undo** icon is displayed towards the top-left of your screen.

Leave the workbook open and carry on to the next section.

	9 - (* -) =) ∓	
Hom	ie	Inser	rt

Moving the contents of a cell or range between worksheets (within the same workbook)

- Switch back to the first worksheet within the workbook called **Worksheet** manipulation.
- Select a cell, range, row or column to move. In this case select the range **B3:C8**. Your screen will look something like this:

	B3	- (•	<i>f</i> ∗ Region		
	А	В	С	D	E
1	2007				
2		1			
3		Region	Sales		
4		Europe	727,463		
5		Africa	343,745		
6		Asia	283,174		
7		Australia	287,636		
8		America	831,173		
9					

- Press Ctrl+X to cut (move) the selected range to the Clipboard.
- Click on the second worksheet tab (called **Projections**).

22				
22 I4 ↓ ▶	▶ 20	07 Sales	Projection	ns ஜ
Ready				

You will now see the contents of the second, empty worksheet displayed.

- Click at the location you wish to paste the data to. In this case click on cell
 C4 and press the Ctrl+V keys to paste the data from the Clipboard. You
 have successfully moved selected data from one worksheet to another
 worksheet within the same workbook.
- Save your changes and close the workbook.

Moving the contents of a cell or range between worksheets (in different workbooks)

- Open a workbook called **Between workbooks 1**.
- Open a second workbook called **Between workbooks 2**.
- Display the contents of the **Between workbooks 1** workbook.

NOTE: To switch between multiple open workbooks, click on the **View** tab and from within the **Windows** section of the Ribbon, click on the **Switch Windows** icon. This displays a drop down list allowing you to select the worksheet that you want to switch to.



 Within the Between workbooks 1 workbook, select a cell, range, row or column to move. In this case select the range B3:C8. Your screen will look something like this:

	B3	- (•	<i>f</i> ∗ Region		
	А	В	С	D	E
1	2007				
2					
3		Region	Sales		
4		Europe	727,463		
5		Africa	343,745		
6		Asia	283,174		
7		Australia	287,636		
8		America	831,173		
9					

- Press Ctrl+X to cut (move) the selected range to the Clipboard.
- Switch to the second workbook (called **Between workbooks 2**).
- Click at the location you wish to paste the data to. In this case click on cell C4 and press the Ctrl+V keys to paste the data from the Clipboard. You have successfully moved selected data from one workbook to another workbook.

NOTE: You could have selected a different worksheet within the second workbook if you wanted.

Leave the workbook open and carry on to the next exercise.

Copying the contents of a cell or range between worksheets (in different workbooks)

- Select the data in the second workbook.
- Press Ctrl+C to copy the selected data to the Clipboard.
- Switch back to the first workbook.
- Click where you wish to paste the data to.
- Press **Ctrl+V** to paste the data from the Clipboard.

You have now copied selected data from one workbook to another workbook.

AutoFill

- Open a workbook called AutoFill.
- Click on cell **B3** which contains the word **Monday**. Move the mouse pointer to the bottom-right corner of this cell and the mouse pointer shape will change to the shape of a small black cross. When the mouse pointer changes shape, press the mouse button down, and while keeping it pressed move slowly down the page. When you release the mouse button you will see that Excel has 'AutoFilled' the range you dragged across with days of the week.
- Click on cell **C3** which contains the word **January**. Use the AutoFill feature to automatically create a column containing all the months of the year.
- Select the cell range **D3:D4**. Use **AutoFill** to extend the series down the page. As you will see the series becomes **1,2,3,4,5,6,7** etc.

D	
	1
	2

- Select the cell range **E3:E4**. Use **AutoFill** to extend the series down the page. As you will see the series becomes **2**,**4**,**6**,**8**,**10** etc.
- Save your changes and close the workbook.

Copying a data range using AutoFill

- Open a workbook called AutoFill a data range.
- Select the range **B2:B24**.

	B2	• (*	f_{x}	Name
	А	В	С	D
1				
2		Name		
3		Agustín		
4		Amerigo		
5		Birgit		
6		Christa		
7		Dennis		
8		Enrique		
9		Ernst		
10		George		
11		Girish		
12		Hilda		
13		Jan		
14		Lou		
15		Louis		
16		Mallika		
17		Mark		
18		Nancy		
19		Robert		
20		Ruth		
21		Susan		
22		Tom		
23		Tom		
24		Valentino		
25				
26				

• Move the mouse pointer to the bottom-right corner of this range and the mouse pointer shape will change to the shape of a small black cross. When the mouse pointer changes shape, press the mouse button down, and while keeping it pressed move slowly to the right, by two columns.

_					
	A	В	С	D	
1		2	~~~~~		-
2		Name			
3		Agustín			
4		Amerigo			
5		Birgit			
6		Christa			
7		Dennis			
8		Enrique			
9		Ernst			
10		George			
11		Girish			
12		Hilda			
13		Jan			
14		Lou			
15		Louis			
16		Mallika			
17		Mark			
18		Nancy			
19		Robert			
20		Ruth			
21		Susan			
22		Tom			
23		Tom			
24		Valentino			
25			ļ		
26				Mari	ĺ

When you release the mouse button you will see that Excel has 'AutoFilled'

	122	• (*	f_X	
4	A	В	С	D E
1				
2		Name	Name	Name
3		Agustín	Agustín	Agustín
4		Amerigo	Amerigo	Amerigo
5		Birgit	Birgit	Birgit
6		Christa	Christa	Christa
7		Dennis	Dennis	Dennis
8		Enrique	Enrique	Enrique
9		Ernst	Ernst	Ernst
10		George	George	George
11		Girish	Girish	Girish
12		Hilda	Hilda	Hilda
13		Jan	Feb	Mar
14		Lou	Lou	Lou
15		Louis	Louis	Louis
16		Mallika	Mallika	Mallika
17		Mark	Mark	Mark
18		Nancy	Nancy	Nancy
19		Robert	Robert	Robert
20		Ruth	Ruth	Ruth
21		Susan	Susan	Susan
22		Tom	Tom	Tom
23		Tom	Tom	Tom
24		Valentino	Valentino	Valentino

• Save your changes and close the workbook.

Sorting a cell range

- Open a workbook called **Sorting**.
- Click within the data contained within column **B**.
- Click on the Data tab and from within the Sort & Filter group, click on Sort A to Z icon.



The data will be displayed as illustrated.

Countries	Value of Sales
Australia	3281746
Canada	2183721
China	2917438
India	1846276
Ireland	2948183
New Zealand	1019483
Pakistan	1281637
United Kingdom	2093627
USA	4817423

• Click on the Sort Z to A icon.



The data will be displayed as illustrated.

Countries	Value of Sales
USA	4817423
United Kingdom	2093627
Pakistan	1281637
New Zealand	1019483
Ireland	2948183
India	1846276
China	2917438
Canada	2183721
Australia	3281746

- Click within the data contained in column C.
- Click on the **Data** tab, and from within the **Sort & Filter** group, click on **Sort A to Z** icon.



The data will be displayed as illustrated.

Countries	Value of Sales
New Zealand	1019483
Pakistan	1281637
India	1846276
United Kingdom	2093627
Canada	2183721
China	2917438
Ireland	2948183
Australia	3281746
USA	4817423

• Click on the Sort Z to A icon.



The data will be displayed as illustrated.

Countries	Value of Sales
USA	4817423
Australia	3281746
Ireland	2948183
China	2917438
Canada	2183721
United Kingdom	2093627
India	1846276
Pakistan	1281637
New Zealand	1019483

• Save your changes and close the workbook.

Searching

Searching and replacing data

- Open a workbook called Search and replace.
- Press Ctrl+F to start the Search utility (or click on the Home tab, then click on the Find & Select icon, from the menu displayed select the Find command).

This will display the Find and Replace dialog box, as illustrated.

Find and Replace	
Fin <u>d</u> Replace	
Find what:	~
	Op <u>t</u> ions >>
	Find All Find Next Close

- Within the **Find what** section of the dialog box, enter the word '**Blue**'. Click on the **Find Next** button and you will find the next occurrence of the word Blue. Keep pressing on this button to find all occurrences within the worksheet.
- Click on the **Replace** tab within the **Find and Replace** dialog box.

Find and Replace	×
Find Replace	_
Find what:	
Replace with:	
Op <u>t</u> ions >>)
Replace <u>All</u> Replace Find All Find Next Close	

- Within the Find what section type in the word 'Blue'.
- Within the Replace with section type in the word 'Purple'.
- Click on the **Find Next** button and once found click on the **Replace** button. Carry on replacing all occurrence of the word **Blue** with the word **Purple**.
- Close the Find and Replace dialog box.
- Press **Ctrl+H** to display the **Find and Replace** dialog box, with the **Replace** tab already selected for you.
- Within the Find what section type in the word 'Red'.
- Within the Replace with section type in the word 'Orange'.
- Click on the **Replace All** button and all occurrences of the word **Red** will immediately be replaced by the word **Orange**.
- Save your changes and close the workbook.

Worksheets

Switching between worksheets

- Open a workbook called Worksheets.
- You are looking at the first worksheet within the workbook. You can confirm this by looking at the worksheet tabs at the bottom-left of your screen.

H + >	₽ I	She	et1	Shee	t2 /	Sheet3	12/
Ready	۲						

• To switch to another worksheet click on either the Sheet2 or Sheet3 tab.

Renaming a worksheet

Click on the Sheet1 tab to display the first worksheet. Double click on the Sheet1 tab and you will be able to type in a new name. In this case type in the name 2003 and then press the Enter key to confirm the change, as illustrated.

```
Ready
```

- Double click on the Sheet2 tab and rename it 2004.
- Double click on the **Sheet3** tab and rename it **2005**. Your tabs will now look like this:

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14 4 F	► 200	3 / 2004 .	2005	· / 🔁 /
		<u>, 1001</u>	2000	
Ready	2			

Good practice with naming worksheets

• By default worksheets are called Sheet1, Sheet2 and Sheet3. You should use meaningful names for your worksheets, especially if you are using multiple worksheets within a workbook. This can make a complicated workbook much easier to understand.

Inserting a new worksheet

• Click on the **2005** worksheet tab to select it. Right click over the tab and from the popup menu displayed, click on the **Insert** command.

14		Insert
15		Delete
16		-
17		<u>R</u> ename
18		Move or Copy
19	ą	<u>V</u> iew Code
20	۵.	Protect Sheet
21		Tab Color
22		Hide
23		Unhide
24		
H ↓ ► N 2003 2004 20	U D	Select All Sheets
Ready 1 2003 2004 20	UJ Z	

• The **Insert** dialog is displayed. Make sure that the **Worksheet** object is selected within the dialog box.

Insert				
General Spread	Isheet Solutio	ns		
Worksheet Worksheet MS Excel 5.0 Dialog	Chart	MS Excel 4.0 Macro	International Macro Sheet	Preview not available.
Templates of	n <u>O</u> ffice Onlin	e		OK Cancel

 Click on the OK button and a new worksheet will be inserted just before the selected worksheet, as illustrated.



Deleting a worksheet

• Make sure that the new tab that you have just inserted is selected. Right click on the tab and from the popup menu displayed select the **Delete** command. The new worksheet will be deleted.

10		
16		Insert
17		Delete
18		<u>R</u> ename
19		Move or Copy
20	a	View Code
21		Protect Sheet
22		Tab Color
23		
24		<u>H</u> ide
25		<u>U</u> nhide
26 H ← ► H 2003 / 20	04 Shet	Select All Sheets
	04 Snecca	
Ready 🛅		

Copying a worksheet within a workbook

• Select the **2003** tab. Right click on the tab and from the popup menu displayed select the **Move or Copy** command.

14			
15			Insert
16			Delete
17			Rename
18			Move or Copy
19		52	View Code
20		°	-
21		4	Protect Sheet
22			Tab Color
23			<u>H</u> ide
24			<u>U</u> nhide
25			Select All Sheets
14 4	► ► 200		
Rea	dy 🛅		

• The **Move or Copy** dialog box is displayed. As we want to copy rather than move, click on the **Create a copy** check box. In the **Before sheet** section of the dialog box, select which worksheet you wish to insert the copy in front of. In this case select **2005**.

Move or Copy	? 🔀
Move selected sheets <u>T</u> o book:	
Worksheets.xlsx	~
Before sheet:	
2003 2004	
2005 (move to end)	~
Create a copy	OK Cancel

• When you click on the **OK** button a copy of the first worksheet will be inserted, as illustrated.



• Delete this copied worksheet before continuing.

Moving a worksheet within a workbook

• Select the **2003** tab. Right click on the tab and from the popup menu displayed select the **Move or Copy** command.

14			
15			Insert
16			<u>D</u> elete
17			Rename
18			Move or Copy
19		52	View Code
20		a	Protect Sheet
21			-
22			Tab Color
23			<u>H</u> ide
24			<u>U</u> nhide
25			Select All Sheets
14 4	► ► 200		
Rea	idy 🛅		

• The **Move or Copy** dialog box is displayed. In the **Before sheet** section of the dialog box, select which worksheet you wish to insert the moved worksheet in front of. In this case select **2005**.

Move or Copy	? 🗙
Move selected sheets <u>T</u> o book:	
Worksheets.xlsx	*
Before sheet:	
2003 2004	~
2005	
(move to end)	\$
Create a copy	
ОК Са	ncel

• When you click on the **OK** button the worksheet will be moved, as illustrated below.

25 H ↓ ► ► 2004 2003 2005 €2 Ready 🛅

- Before continuing, rearrange the worksheets in the correct order.
- Save your changes and close the workbook.

Copying or moving worksheets between workbooks

- Open a workbook called **Between workbooks 2**. Leave this workbook open.
- Open a workbook called **Between workbooks 1**.
- Click on the worksheet tab for 2006 Sales.



• Right click on the **2006 Sales** tab and from the popup menu displayed select the **Move or Copy** command.

11	Insert	i
12	Delet	e
13	Rena	me
14		or Copy
15	View	
16		
17		ct Sheet
18	<u>T</u> ab C	olor 🕨
19	<u>H</u> ide	
20	<u>U</u> nhi	de
21	Selec	t All Sheets
I ↓ ▶ ► 2005 Sales	2006 Sales / 2007	

• The Move or Copy dialog box is displayed.

Move or Copy		? 🛛
Move selected sheets <u>T</u> o book:		
Between workbooks 1	.xlsx	*
Before sheet:		
2005 Sales 2006 Sales 2007 Sales (move to end)		
Create a copy		
	ОК	Cancel

• Click on the **down arrow** in the **To book** section of the dialog box. From the drop down list, select the workbook called **Between wordbooks 2**, as illustrated below.

Move or Copy	? 🗙
Move selected sheets <u>T</u> o book:	
Between workbooks 1.xlsx	*
(new book) Between workbooks 1.xlsx Between workbooks 2.xlsx	~
	~
	~
Create a copy	
OK Can	cel

• Use the **Before sheet** section of the dialog box to determine where in the second workbook the worksheet will be copied to.

<u>B</u> efore sheet	:
2005 Sales	A 10 10 10 10 10 10 10 10 10 10 10 10 10
2006 Sales	
2007 Sales	
(move to en	d)

• Click on the Create a copy check box.



- Click on the **OK** button.
- Switch to the second workbook and you should see a copy of the worksheet inserted into the workbook.

TIP: Experiment with moving a worksheet between workbooks using the same method, but this time do not click on the **Create a copy** check box.



• When you have finished experimenting save the changes in both your workbooks and close all open files.

Formatting

Font formatting

• The font formatting options are located on the **Home** tab within the **Font** group.

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F	Font 🕠

Font type

• Open a workbook called **Font formatting**. Select the range **C3:G3**. Click on the **down arrow** within the **Font** section and select a different font type, such as **Arial**.

	• (~ -) =	F	ont formatt	ing.xlsx - Mici
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Paste	Theme Fonts		-	- % , 5
- 💞	Tr Cambria (Headings)			
Clipboard 🦻	Tr Calibri (Body)	ent	G	Number
C3	All Fonts			
A	T Olubon	E	F	G
1 Sales vol	The Agency FB			
2	T ALGERIAN			
3		_	Sales 2006	
4	Tr Alibi	189 121	193 132	201 143
6	Tr Andale Mono IPA	109	102	94
7	™ Arial	98	95	85
8	Tr Arial Black	96	92	93
9	Tr Arial Narrow	54	74	84
10	The Arial Rounded MT Bold	83	88	93
11	ℜ Arial Unicode MS	43	54	73
12	Tr Baskerville Old Face	20	23	32
13	The Batavia			
14	The Bouhour 93			
15	The Bell MT			
16 17				
17	The Berlin Sans FB			
19	🅆 Berlin Sans FB Demi			
20	* Bernard MT Condensed -			
21	·····	1		

• Experiment with applying different fonts to your data.

Font size

• Select the range **B3:B12**. Click on the **down arrow** within the **Font Size** section and select a different font size.

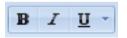
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- 11						w Devel
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			Gi A	lignment	6	Number
	_	🔄 Co	untry			
14	4	С	D	E	F	G
1	-					
_	-	s 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
	_	102	129	189	193	201
2	6	98	120	121	132	143
2	8	109	110	109	102	94
		92	99	98	95	85
1	-	92	95	96	92	93
	-	32	43	54	74	84
		67	79	83	88	93
		24	34	43	54	73
		12	24	20	23	32
	9 9 9 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9 10 11 12 14 Y 16 18 20 22 24 26 28 10 36 48 72	9 9 4 4 10 10 11 6 Co 11 12 C 12 14 C 12 14 C 12 14 C 12 14 C 12 10 2 20 2 20 03 20 2 24 10 2 26 98 28 10 9 24 26 98 28 10 9 20 36 92 48 92 72 32 67 7 24 10 10 10 10 10 10 10 10 10 10 10 10 10	9 9 10 10 11 12 14 20 20 20 20 20 20 20 20 20 20	9 A Image: Second	9 9 3 Aignment 3 10 10 6 Aignment 6 11 12 14 C D E F 14 C D E F 7 18 20 2003 Sales 2004 Sales 2005 Sales 2006 22 102 129 189 193 26 98 120 121 132 28 109 110 109 102 28 109 110 109 102 28 92 95 96 92 92 95 96 92 92 32 43 54 74 67 79 83 88 24 34 43 54

TIP: You can also select a range and use the **Increase Font Size** and **Decrease Font Size** icons.



Bold, italic, underline formatting

• Select the range **C4:G12** and experiment with applying bold, italic and underlining formatting using the icons illustrated below.



TIP: You can easily apply double underline formatting. To do this click on the **down arrow** next to the **Underline** icon. Select the **Double Underline** command.

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	<u>u</u>	<u>U</u> nderline
2	₽	Double Underline

Cell border formatting

• Select the range **B3:G12**. Click on the **down arrow** next to the **Border** icon. A drop down is displayed from which you can select the required border. Select **All Borders**.

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0	Hom	e Insert	Pag	e Layout	Formulas	Data	Re	view	Vie	w Develo	per
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	B3	- (B <u>o</u> ttom B	order		Г				
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1	Sales vol	ume by counti		Left Bord	er						
2				<u>R</u> ight Bor	der						
3		Country		<u>N</u> o Borde	r		05	Sales	2006	Sales 2007	
4		India		All Border	rs		.89		193	201	
5		Canada	<u>.</u>	Out <u>s</u> ide B	Borders		21		132	143	
6		USA		<u>T</u> hick Box	Border		.09		102	94	
7		United Kingo		<u>B</u> ottom D	ouble Border		98		95	85	
8		Australia New Zealand		T <u>h</u> ick Bott	tom Border		96 54		92 74	93 84	
10		China		Top an <u>d</u> E	Bottom Border		83		88	93	
11		Pakistan		Top and T	lick Bottom B	order	43		54	73	
12		Mexico		Top and D	Do <u>u</u> ble Botton	Border	20		23	32	
13			Dra	w Borders			Γ				
14				Draw Bor	der						
15				Draw Bor							
16				Erase Bor	_						
17				Line Colo		•					
18			_	Line Style			H				
19			Ħ	More Bor			⊢				
20				More Bor	uers		1				

• Your data will now look like this.

Country	Sales 2003	Sales 2004	Sales 2005	Sales 2006	Sales 2007
India	102	129	189	193	201
Canada	98	120	121	132	143
USA	109	110	109	102	94
United Kingdom	92	99	98	95	85
Australia	92	95	96	92	93
New Zealand	32	43	54	74	84
China	67	79	83	88	93
Pakistan	24	34	43	54	73
Mexico	12	24	20	23	32

• Click on the **Undo** icon (top-left of your screen) to undo this formatting.

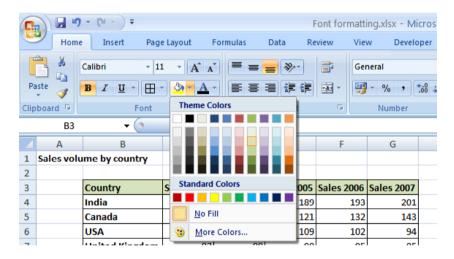


 Spend a little time experimenting with applying different types of borders. Remember that you can use the **Undo** icon to undo any formatting that you apply.

TIP: Experiment with applying border formatting effects, such a thick or double edged border effects.

Formatting the background colour

• Select the range **B3:G3**. Click on the **Fill Color** icon. Move the mouse over a colour and you will see the colour formatting previewed within your data. Click on a colour to apply it.



TIP: Be carful when applying background fill colours as it may make any text within the range difficult to see. Avoid using similar text colours and background fill colours.

Formatting the font colour

• Select the range **B3:B12**. Click on the **down arrow** next to the **Font Colour** icon. This will display a drop down from which you can select the required colour. Experiment with applying different font colours.



• Save your changes and close the workbook.

Alignment formatting

• The alignment options are contained within the **Alignment** group on the **Home** tab.



Aligning contents in a cell range

• Open a workbook called **Alignment**. Select the range **C3:G12**. Click on the **Center** icon to centre the cell contents in this range. Try applying **left** and then **right** alignment formatting. Use the alignment icons illustrated below.



Centring a title over a cell range

• Click on cell C2 and type in the word 'Sales'. We want to centre this within the range C2:G2. To do this, select the range C2:G2 and then click on the Merge and Center icon.

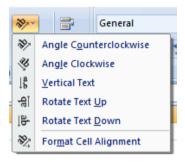


• Your screen will now look like this.

			Sales		
Country	2003	2004	2005	2006	2007
India	102	129	189	193	201
Canada	98	120	121	132	143
USA	109	110	109	102	94
United Kingdom	92	99	98	95	85

Cell orientation

• Select the range **C3:G3**. Click on the **Orientation** icon. You will see a drop down menu allowing you to format the cell orientation.



• Select the **Angle Counterclockwise** command. Your data will now look like this.

Country	2003	2004	2005	2000	2001
India	102	129	189	193	201
Canada	98	120	121	132	143
USA	109	110	109	102	94

• Experiment with applying some of the other orientation effects.

Text wrapping

• Click on cell **B14**. Type the following txt into cell **B14**.

All revenues are pre- tax profits.

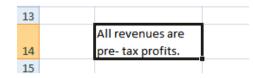
• When you press the **Enter** key you will see that the text does not 'fit' into the cell.

13	
14	All revenues are pre- tax profits.
15	

• Select cell **B14** and click on the **Wrap Text** icon.



• The cell will now look like this.



• Save your changes and close the workbook.

Aligning cell contents vertically

- Open a workbook called **Vertical alignment**. As you can see the cell contents are aligned to the bottom of the cell.
- Select the data as illustrated.

	C3	•	. (6	<i>f</i> ∗ Sales /	Area			
	А	В	С	D	E	F	G	Н
1								
2								
3			Sales Area	2005	2006	2007	2008	
-			Surcornea	2005	2000	2007	2000	
4			North	234	254	287	300	
4			North	254	2.34	207	500	
5			South	654	763	427	675	
6			East	324	324	553	432	
7			West	234	543	347	432	
8								

 Click on the Home tab and from within the Alignment section select the required vertical alignment option.

9B	9 -	(21 -) =						Vertical al	ignm
	Home	Insert	Page Layout	Formulas	Data	Review	View	Developer	Ac
Paste				11 · A		= <mark>=</mark> > = = #		Wrap Text Merge & Cente	er 🔻
	Clipboard	G.	For	it	G	,	Alignment		G.

• Experiment with applying each of the three vertical alignment options.

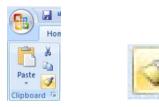


Top Alignment Middle Alignment Bottom Alignment

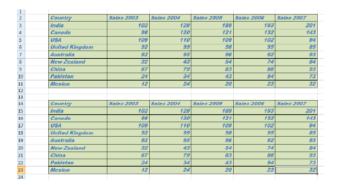
- After you have finished experimenting, set the alignment to **Middle Alignment**.
- Save your changes and close the workbook.

Format Painter

- Open a workbook called Format painter.
- Click within the upper table and click on the **Format Painter** icon. This icon is contained within the **Clipboard** group of the **Home** tab.



- Once you click on the Format Painter icon, you will notice that the shape of the mouse pointer changes to the shape of a paintbrush. You can now apply the formatting within the cell that you clicked on, to another range within the worksheet.
- Click on cell **B14**, and while keeping the mouse button pressed, move the mouse pointer to cell **G23**. Release the mouse button and the formatting will be copied to the second range within your worksheet, as illustrated.



• Save your changes and close the workbook.

Number formatting

Number formatting

 Open a workbook called Number formatting. Click on cell C2. Click on the down arrow next to the Number Format control. You will see a drop down menu from which you can select the format. In this case select Number.



• This tells Excel that the data contained within this cell should always now be treated as a number, rather than say text or a date.

Decimal point display

• Click on cell C4. Click on the **Decrease Decimal** icon so that no decimal places are displayed.



• The cell contents should now look like this.

Format this number to display no decimal places. 194593

• Set the contents of cell **C5** to display **1** decimal point.

• Set the contents of cell C6 to display 2 decimal points.

TIP: To increase the number of decimal points displayed, click on the **Increase Decimal** icon.



Applying and removing comma style formatting (to indicate thousands)

• Click on cell **C8**. Click on the **Comma Style** icon (within the **Number** section of the **Home** tab) to format the number using commas.



• Your number should now look like this.



NOTE: To remove comma style formatting, click on the **Number format** icon (within the **Number** section of the **Home** tab).

		Number forma	atting.xlsx - Microsoft Exc
Home Insert	Page Layout Formulas Da	ta Review View Developer Ad	trobat
Cut	Calibri • 11 • A A	E = Wrap Text	Accounting
Paste V Gopy Paste V Gopy Paste	B <i>I</i> <u>U</u> ▼ <u>→</u> <u>→</u> <u>→</u> ▼ <u>→</u> ▼	📰 📰 📰 📰 Merge & Center 🔹	\$ • % • • • • • • • • • • • • • • • • •
Clipboard 🕞	Font 🕞	Alignment 🕞	Number 🕞

• Select the General or Number format option, as illustrated.

0	1 - "	- (24 -) =	Number form	atting.xlsx	- Microsoft Excel
0	Home	Insert Page Layout Formulas Data Revie	w View Developer A	crobat	
Pa	Clipboar	$\begin{array}{ccc} Calibri & \downarrow 11 & \downarrow A & \downarrow \\ mat Painter \\ B & I & \underline{U} & \neg & \bigcirc & \land & A \\ \end{array} = \equiv \equiv \\ \hline B & I & \underline{U} & \neg & \bigcirc & \land & A \\ \hline \end{array}$		ABC 123	General No specific format
	C8	 ✓ ∫_x 1945968573 		12	Number 1945968573.00
1	A	В	C D	<u>0-11</u>	Currency \$1,945,968,573.00
2		Format this cell to use number formatting convention:	5 194593.1235	123	Accounting \$1,945,968,573.00
4		Format this number to display no decimal places.	194593.1235		Short Date
5		Format this number to display 1 decimal place Format this number to display 2 decimal place	194594.1235 194595.1235		######################################
7		·			Long Date
8 9		Format this number to display comers	1,945,968,573.00		Time
10		Format this number to display a HK pound sign	254 68	(\cdot)	##########

• The cell contents will now be displayed without comma style formatting.

Currency symbol

Select cell C10 and format it to display the British Pound symbol. To do
this click on the down arrow next to the Currency icon and select the £
option.

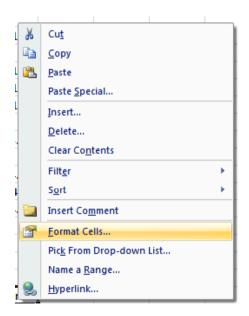
9	% , (*.0 .00) Conditional Formatting
	£ English (U.K.)
	\$ English (U.S.)
	€ Euro (€ 123)
	More Accounting Formats

- Select cell C11 and format it to display the Dollar symbol.
- Select cell C12 and format it to display the Euro symbol. Your data will now look like this.

£	234.98
\$	234.98
€	234.98
€	234.98

Date styles

- Click on cell **B17** and type in the text '**The date today is**'. Click on cell **C17** and type in today's date. When you press the **Enter** key you may find that the style of the date changes automatically.
- Right click over cell C17 and from the popup menu displayed select the Format Cells command.



• This will display the Format Cells dialog box.

Format Cells		? 🗙
Number Alignment <u>Category:</u> General Number Currency Accounting Date Time Percentage Fraction Scientific Text Special	Font Border Fill Protection Sample 07-Mar-07	
Custom	dd/mm/yyyy dd-mmm-yy dd-mmm mmm-yy h:mm AM/PM h:mm:ss AM/PM	
Type the number formal	Delet t code, using one of the existing codes as a starting point.	e
	ОК Са	ncel

• Within the **Category** section of the dialog box, select the **Date** category. Select the required format from the **Type** section of the dialog box.

Format Cells					? 🔀
Number Alignment	Font	Border	Fill	Protection	
Category: General Number Currency Accounting Date Time Percentage Fraction Scientific Text Special Custom	14/03/ 14/03/ 14/3/0 14.3.0 2001-0	i/07 i/2001 arch 2001 2001 01 1 1 33-14 ilocation):			
	egional dati	e and time	settings th	hat are specifie	te formats that begin with an asterisk (*) d for the operating system. Formats OK Cancel

• Click on the **OK** button to apply the date format. Experiment with applying different types of date format to the cell.

Percentages

• Click on the cell **C15**. To change this number from **17** to **17%**, type in **17%** and press the **Enter** key. You will then see the contents displayed as illustrated below.



• Save your changes and close the workbook.

Applying Percentage formatting to a cell or range

- You can format numbers within a worksheet using the percentage format. You need to be carful however how you use this formatting, as you can get some unexpected results if used incorrectly.
- Open a workbook called **Percentage formatting**. This worksheet contains two sets of data, neither of which make sense at present. We need to tell Excel to treat the contents of cells **C4** and **G4** as cells containing percentages.
- Click on cell **C4** to select it. To apply percentage formatting to this cell, click on the **Home** tab and from within the **Number** section, click on the **Percentage** icon.

				Percentage fo	ormatting.xlsx - Microsoft E
Home Insert	Page Layout Fo	rmulas Data	Review View	Developer	Acrobat
Cut	Calibri 🔹 14	• A * =	= = >	Wrap Text	General 🔹
Paste	BIU-	<u>~ A</u> - E		🍓 Merge & Center	
Clipboard 🕞	Font	5	Alignme	nt	Number 🕞

• You will see the following, which is not quite the result we were expecting.

	C5	√	Ļ
	А	В	С
1			
2			
3		Full price	55
4		Percentage discount	1000%
5		Value of discount	550
6		Sale price after discount	-495
7			

As you have just seen, if a cell contains numbers, BEFORE you apply percentage formatting to the cell, then the numbers in the cell are multiplied by 100.

 Click on cell G4. . To apply percentage formatting to this cell, click on the Home tab and from within the Number section, click on the Percentage icon. The cell is empty so you will not see any change. However if you enter the number 10, to cell G4 you will see the following.

F	G
Full price	55
Percentage discount	10 %
Value of discount	5.5
Sale price after discount	49.5

As you have just seen numbers that are typed into the cells after you have apply the percentage formatting are treated differently to cells already containing data.

• Save your changes and close the workbook.

Freezing row and column titles

Freezing row and column titles

- Open a workbook called Freezing.
- Scroll down through the data and you will see that the title row, which contains a description of each columns contents, scroll out of sight. This makes it difficult to remember what the data in each column represents, if you cannot see the column title row.
- Make sure that you can see the title row displayed, as illustrated.

	G18 🗸 💿	f_{x}			
	А	В	С	D	E
1	Component code	Color	Number in stock	Value of each component	Total value of stock
2	100001	Red	2	22.99	0.00
3	100002	Red	2	11.50	23.00

 To freeze the top row so that it remains in sight at all time, click on the View tab and from within the Window group on the Ribbon, click on the Freeze Panes command.

View	Developer		
Zoom	100% Zoom to Selection		Call Call Call Call Call Call Call Call
	Zoom	Windo	w

• From the drop down list displayed, click on the Freeze Top Row command.

View Developer	
Zoom 100% Zoom to Selection	 New Window Split Arrange All Hide Save Switch Workspace Windows
Zoom	Freeze Panes Keep rows and columns visible while the rest of the worksheet scrolls (based on current selection).
D 31.	Freeze Top <u>Row</u> Keep the top row visible while scrolling through the rest of the worksheet.
22. 10. 11.	

• Scroll down through the data. As you can see the top row stays visible at all times now.

	А	В	С	D	E
1	Component code	Color	Number in stock	Value of each component	Total value of stock
53	100052	White	1	2.40	2.40
54	100053	White	4	2.50	10.00
55	100054	White	4	2.60	10.40

• To unfreeze the top row, click on the **View** tab and from within the **Window** group on the Ribbon, click on the **Unfreeze Panes** command.

View Developer		
Zoom 100% Zoom to Selection	New Window Split Arrange All Hide Freeze Panes Unhide	Sw
Zoom	Unfreeze Panes Unlock all rows and columns to scroll through the entire worksheet.	
D Value of each compone	Freeze Top <u>R</u> ow Keep the top row visible while scrolling through the rest of the worksheet.	
2.	Freeze First Column Keep the first column visible while scroll through the rest of the worksheet.	ing

TIP: You can use the same technique to freeze the first column, so that when you scroll to the right it is always visible. To do this you would select the **Freeze First Column** command.

View Developer		
	Rew Window Split	3
Zoom 100% Zoom to Selection	Freeze Panes Unhide H Workspace Windo	
Zoom	Ereeze Panes Keep rows and columns visible while the rest of the worksheet scrolls (based on current selection	
D	Freeze Top Row	
Value of each compone	Keep the top row visible while scrolling through the rest of the worksheet.	۱ [
22.	Freeze First Column	
11.	Keep the first column visible while scrolling through the rest of the worksheet.	

• Save your changes and close the workbook

Formulas and Functions

Formulas

Creating formulas

• Open a workbook called Formulas. Click on cell E3.

In cell **E3** we need to create a formula that will calculate the value of the stock for that particular component. To do this we need to multiply the contents of cell **C3** by the content of cell **D3**.

• All formulas within Excel start with the 'equals' symbol.

Type in the following formula.

=C3*D3

TIP: the * symbol means 'times'.

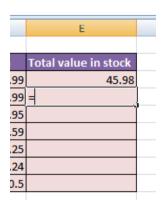
Press the Enter key and you will see the result of the calculation in cell E3.

• Click on cell **E3** and you will see the formula displayed in the bar above the worksheet.



Good Practice: The easy way to create formulas

• Click on cell E4 and type in the equals sign.



• Click on cell **C4** and you see this.

	E	
_		
	Total value in stock	
9	45.98	
9 9	=C4	
5		
9		
5 9 5 4		
4		
5		

• Type in the * symbol, you see this.

E	
Total value in stock	
45.98	
=C4*	

• Click on cell **D4** and you will see this.

_	E	
	Total value in stock	
99	45.98	
	=C4*D4	Į
95		
59		
25		
24		
.5		

• Press the **Enter** key and you see the result of the calculation. This method may seem more complicated at first but when you are creating complex formulas, you will find this method is actually easier and helps to reduce errors, such as typing incorrect cell references.

Copying formulas

- Click on cell E4.
- Move the mouse pointer to the bottom-right border of this cell and you will notice that the mouse pointer changes to the shape of a small, solid black cross. When you see this shape change press the mouse button and while

keeping the mouse button depressed, drag down to cell **E9**. Release the mouse button and you will see the formula copied down this range. If you look at the formula in each cell of the range the cell references are automatically adjusted to match each row, i.e. row 8 contains the formula =**C8*****D8**, while row 9 contains the formula =**C9*****D9**.

Your screen will now look like this.

	А	В	С	D	E
1					
2		Component Code Number	Number in stock	Value of each item	Total value in stock
3		100847	2	22.99	45.98
4		100846	4	34.99	139.96
5		100645	9	12.95	116.55
6		100837	1	13.59	13.59
7		100846	0	9.25	0
8		100243	2	5.24	10.48
9		100773	5	40.5	202.5

• Save your changes and close the workbook.

Operators

• Operators sound complicated. In reality they are items such as:

+ (plus)
- (minus)
/ (divide)
* (multiply)

You use operators as part of your formulas. There are other operators but these are the commonly used ones.

Using operators in formulas

- Open a workbook called Formula operators.
- Click on cell C3 and enter the following which will add the number 3 and 7:

Press the Enter key and you will see the result displayed in the cell.

• Click on cell **C4** and enter the following which will subtract the number **4** from the number **18**:

=18-4

Press the Enter key and you will see the result displayed in the cell.

• Click on cell **C5** and enter the following which will divide the number **20** by the number **4**:

=20/4

Press the Enter key and you will see the result displayed in the cell.

• Click on cell **C6** and enter the following which will multiply the number **4** by the number **9**:

=4*9

Press the Enter key and you will see the result displayed in the cell.

• Save your changes and close the workbook.

Formula error messages

• When writing formulas it is easy to make a mistake: listed below are some common error messages.

#######

The contents of the cell cannot be displayed correctly as the column is too narrow.

#REF!

Indicates that a cell reference is invalid. This is often displayed when you delete cells which are involved in a formula.

#NAME?

Excel does not recognise text contained within a formula.

#DIV/0!

This indicates that you have tried to divide a number by zero (0).

Relative & absolute cell referencing

Relative cell referencing within formulas

- Open a workbook called Cell referencing.
- The first worksheet within the workbook lets us look at relative addressing.
- Click on cell E4. We need to insert the formula for multiplying items in column C by the items in columns D. Type in the following formula:

=C4*D4

- Press the Enter key and you will see the result of the calculation in cell E4.
- Click on cell **E4**, and move the mouse pointer to the bottom-right corner of cell **E4**, and when the pointer changes to the shape of a small black cross, press the mouse button, and keep it pressed down. Drag down the page to

cell **E12** and then release the mouse button.

- If you click on cell **E5** you will see the following **=C5*D5**.
- If you click on cell **E6** you will see the following **=C6*D6**.
- If you click on cell **E7** you will see the following =**C7*****D7**.
- If you click on cell **E8** you will see the following **=C8*D8**.
- If you click on cell **E9** you will see the following **=C9*D9**.
- If you click on cell **E10** you will see the following **=C10*D10**
- If you click on cell **E11** you will see the following =**C11*D11**.
- If you click on cell **E12** you will see the following =**C12*D12**.
- As you can see the referencing is completely relative. This will become clearer when you have worked through the rest of this section.

Absolute cell referencing within formulas

- Click on the **Absolute** tab at the bottom of the worksheet.
- Click on cell **D4**. We need to enter a formula that will take the price and then add 5% to the price to give a total value.

The 5% figure has been entered into cell C15.

• Type in the following formula into cell **D4**.

=C4*C15

If you do the sums, you will find that this formula displays the correct delivery charge price in cell **D4**.

Click on cell D4, and move the mouse pointer to the bottom-right corner of cell D4, and when the pointer changes to the shape of a small black cross, press the mouse button, and keep it pressed down. Drag down the page to cell D12 and then release the mouse button. The data will look something like this.

Part Number	Price (excluding delivery)	Cost of delivery
100837	22.99	1.15
100263	10.95	0.00
100937	20.50	0.00
100234	10.50	0.00
100375	12.95	0.00
100746	29.84	0.00
100387	23.43	0.00
100883	9.48	0.00
100338	20.50	0.00

As you can see something has gone very wrong, as the 5% delivery charge appears to be 0 for most of the items.

• Click on cell **D5** and you can see what the problem is. The formula contained within this cell is:

=C5*C16

Part of the cell reference points to cell **C16** (which if you check is empty). The problem is that because of the relative nature of the formula, the component that should always refer to the contents of the cell in **C15** (i.e. the delivery charge percentage), in fact move down as you drag down the screen to extend your calculations.

- Select the range **D4:D12** and press the **Del** key to delete the cell contents.
- Click on cell **D4** and we will try again. This time type in the following formula.

=C4*\$C\$15

The dollar signs make the reference to cell **C15** absolute.

• Try extending the formula to fill the range down to **D12**. This time you should find that the delivery charges are calculated correctly.

Part Number	Price (excluding delivery)	Cost of delivery
100837	22.99	1.15
100263	10.95	0.55
100937	20.50	1.03
100234	10.50	0.53
100375	12.95	0.65
100746	29.84	1.49
100387	23.43	1.17
100883	9.48	0.47
100338	20.50	1.03

TIP: You have seen relative and absolute referencing. You can also have mixed references, which contain an absolute and a relative reference.

• Save your changes and close the workbook.

Functions

What is a function?

 A function allows you to calculate a result such as adding numbers together, or finding the average of a range of numbers.

Common functions

• Some commonly used functions include:

AVERAGE: Used to determine the average value of the selected cells contents.

COLUMNS: Used to return the number of columns within a reference.

COUNT: Used to count how many numbers are in the list.

COUNTA: Used to count the number of cells that are not empty and the values within the list of arguments.

COUNTBLANK: Used to count empty cells within a cell range.

MAX: Used to return the maximum number from a list.

MIN: Used to return the minimum number from a list.

ROUND: Used to round off numbers to a specified number of decimal points.

SUM: Used to add the contents of selected cells.

To display the available functions, press **Ctrl+N** to display a blank workbook and then click on the **Formulas** tab and within the **Function Library** group click on the **Insert Function** icon.



This will display the Insert Function dialog box.

Insert Function	? 🗙					
Search for a function:						
Type a brief description of what you want to do and then click Go	<u>6</u> 0					
Or select a category: Most Recently Used						
Select a functio <u>n</u> :						
SUM AVERAGE IF HYPERLINK COUNT MAX SIN						
SUM(number1,number2,) Adds all the numbers in a range of cells.						
Help on this function OK	Cancel					

NOTE: Depending on the configuration of your PC the **Function Library** group of the **Formulas** tab may look slightly different, as illustrated below. The options however are identical.

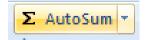
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	Home	Insert	Page La	yout	Formu	las	Data R	leview	View
fx	Σ	ß	þ	?	A		Ŕ	θ	
Insert Function		Recently Used *	Financial	Logical	Text		Lookup & Reference	Math & Trig *	More Functions *
				Functio	n Librar	у			

Sum function

- Open a workbook called **Functions**.
- If necessary, click on the **Sum** worksheet tab.

26 I + + M Sum Average Max Min Count Counta Countblank If Ready 🛅

- Click on cell C8. In this cell we need to sum the values in the column above.
- Click on the **Formulas** tab and within the **Function Library** group click on the **AutoSum** icon.



TIP: Click on the AutoSum icon, not the down arrow beside the icon.

• You will see the following displayed on your screen.

	SUM	- (⊙ X ✓ fs	=SUM(C4:C7)	
	А	В	С	D
1				
2				
3		Sales Region	No of sales	
4		North	34	
5		South	11	
6		East	84	
7		West	38	
8		TOTAL	=SUM(<mark>C4:C7</mark>)	
9			SUM(number1, [numbe	r2],)

• Press the Enter key and you will see the AutoSum result in cell C8.

	E19	▼ () f3	e -
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		TOTAL	167
-			

• Click on cell **C8**, and you will see the function displayed in the bar just above your worksheet.

	C8	▼ (¶	=SUM(C4:C7)
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		TOTAL	167
0			

As you can see the function is:

=SUM(C4:C7)

• This function tells Excel to sum the values in the range C4:C7.

Average function

• Click on the Average worksheet tab.



- Click on cell **C8**. In this cell we want to display the average number of sales within the regions.
- Click on the **Formulas** tab and within the **Function Library** group click on the **arrow** next to the **AutoSum** icon. You will see a drop down list displayed. Click on the **Average** command.

Ca	Functions.										
9	Ho	me	Insert	Page L	.ayout	I	Formulas	Data	R	eview	Viev
fr		Aut	toSum 🚽	👔 Logi	cal *	ĺ	💫 Lookup i	& Referenc	e *	,đ	20
JX	Σ	E <u>s</u>	<u>š</u> um		r i	í	🖗 Math & 1	Frig *		Name	f_x^{\odot}
Functio	-	A	Average		& Tim	e * 👔	📁 More Fu	nctions *		Manage	r 🕮
		9	ount Numb	ers	Libraŋ	у					Det
		L	<u>M</u> ax		f _×						
	A	N	M <u>i</u> n		в				C	:	
1		N	More <u>F</u> unctio	ns							
2	_				,						
3		5	Sales Re	gion				I I	10 0	of sale	s
4		1	North							34	4
5		5	South							1:	1
6		E	East							84	4
7		١	West							3	B
8		/	Average	no. of	sale	es po	er regio	n			ļ

• You will see the following displayed on your screen.

	SUM ▼ (× ✓ f _x =AVERAGE(C4:C7)							
	А	В	С	D				
1								
2								
3		Sales Region	No of sales					
4		North	34					
5		South	11					
6		East	84					
7		West	38					
8		Average no. of sales per region	=AVERAGE(<mark>C4:(</mark>	C7)				
9			AVERAGE(number1,	[number2],)				

• Press the Enter key and you will see the average value displayed in cell C8.

	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Average no. of sales per region	41.75
-			

• Click on cell **C8**, and you will see the function displayed in the bar just above your worksheet.

	C8	✓ ∫x =AVERAGE(C4:	C7)
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Average no. of sales per region	41.75
0			

As you can see the function is:

=AVERAGE(C4:C7)

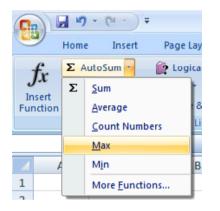
• This function tells Excel to sum the average in the range C4:C7.

Max function

• Click on the Max worksheet tab.



- Click on cell **C8**. In this cell we want to display the highest number of sales within a region.
- Click on the **Formulas** tab and within the **Function Library** group click on the **down arrow** next to (or under) the **AutoSum** icon. You will see a drop down list displayed. Click on the **Max** command.



• You will see the following displayed on your screen.

	SUM	→ (× ✓ f _x = MAX(C4:C7)	
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Highest no of sales in a region	=MAX(<mark>C4:C7</mark>)
9			MAX(number1, [number2],)

Press the Enter key and you will see the maximum value displayed in cell C8.

	D14	4 • (* <i>f</i> x	
4	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Highest no of sales in a region	84

• Click on cell **C8**, and you will see the function displayed in the bar just above your worksheet.

	C8		
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Highest no of sales in a region	84

As you can see the function is:

=MAX(C4:C7)

• This function tells Excel to display the maximum value within the range C4:C7.

Min function

- The MIN function will display the minimum number within a range.
- Click on the **Min** worksheet tab.

```
    26

    IA ◆ ▶I

    Sum / Average / Max

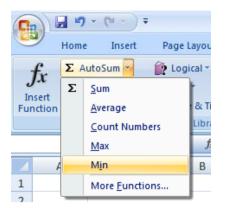
    Min / Count

    Countblank

    If /

    Ready
```

- Click on cell **C8**. In this cell we want to display the lowest number of sales within a region.
- Click on the **Formulas** tab and within the **Function Library** group click on the **down arrow** next to (or under) the **AutoSum** icon. You will see a drop down list displayed. Click on the **Min** command.



• You will see the following displayed on your screen.

	SUM $\checkmark (\checkmark \checkmark \checkmark f_{\star} = MIN(C4:C7)$							
	А	В	С					
1								
2								
3		Sales Region	No of sales					
4		North	34					
5		South	11					
6		East	84					
7		West	38					
8		Minimum no of sales in a region	=MIN(<mark>C4:C7</mark>)					
9			MIN(number1, [number2],)					

• Press the Enter key and you will see the minimum value displayed in cell C8.

	C14		
1	A	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Minimum no of sales in a region	11
~			

• Click on cell **C8**, and you will see the function displayed in the bar just above your worksheet.

	C8		
	А	В	С
1			
2			
3		Sales Region	No of sales
4		North	34
5		South	11
6		East	84
7		West	38
8		Minimum no of sales in a region	11

As you can see the function is:

=MIN(C4:C7)

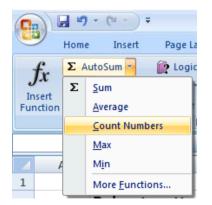
• This function tells Excel to display the minimum value within the range **C4:C7**.

Count function

- The **Count** function will count up the number of cells which contain numbers.
- Click on the **Count** worksheet tab.



- Click on cell **C19**. In this cell we want to display the number of cells in the column above that contain a number.
- Click on the **Formulas** tab and within the **Function Library** group click on the **down arrow** next to (or under) the **AutoSum** icon. You will see a drop down list displayed. Click on the **Count Numbers** command.



• You will see the following displayed on your screen.

	А	В	С	D			
1			_	_			
2		Delegates attending the meeting					
3							
4		Delegate country	Present	Not present			
5		Australia	1				
6		Brazil	1				
7		Canada	1				
8		China		1			
9		Cyprus	1				
10		Greece	1				
11		India	1	1			
12		Ireland	1				
13		New Zealand	1				
14		Pakistan	1				
15		South Africa	1				
16		Turkey		1			
17		UK	1				
18		USA	1				
19		=COUNT(C17:C18)					
20		(COUNT(value1, [value]	2],)			
21							

• WARNING: In all the previous examples, there was a column containing values immediately above the cell into which we inserted the function. In this case some of the cells within the column are empty and Excel, as you can see has only applied the Count function to the range C17:C18. The reason for this is that the next cell up, i.e. cell C16 is empty.

We need to tell Excel that the range we are interested in, actually extents from **C5:C18**.

To do this, click on cell **C18** and while holding down the mouse button drag up to cell **C5**. Then release the mouse button. Your screen should now look like this.

				_
	Α	В	С	D
1				
2		Delegates attending the	meeting	
3				
4		Delegate country	Present	Not present
5		Australia	1	
6		Brazil	1	
7		Canada	1	
8		China		1
9		Cyprus	1	
10		Greece	1	
11		India	1	1
12		Ireland	1	
13		New Zealand	1	
14		Pakistan	1	
15		South Africa	1	
16		Turkey		1
17		UK	1	
18		USA	1	
19		=	COUNT(C5:C18	3)
20			COUNT(value1, [va	lue2],)
-				

• Press the Enter key and you will see the count value displayed in cell C19.

	А	В	С	D
1				
2		Delegates attending the	meeting	
3				
4		Delegate country	Present	Not present
5		Australia	1	
6		Brazil	1	
7		Canada	1	
8		China		1
9		Cyprus	1	
10		Greece	1	
11		India	1	1
12		Ireland	1	
13		New Zealand	1	
14		Pakistan	1	
15		South Africa	1	
16		Turkey		1
17		UK	1	
18		USA	1	
19		Totals	12	
20				

• Click on cell **C19**, and you will see the function displayed in the bar just above your worksheet.

	C19		OUNT(C5:C18)	
	А	В	С	D
1				
2		Delegates attending th	e meeting	
3				
4		Delegate country	Present	Not present
5		Australia	1	
6		Brazil	1	
7		Canada	1	
8		China		1
9		Cyprus	1	
10		Greece	1	
11		India	1	1
12		Ireland	1	
13		New Zealand	1	
14		Pakistan	1	
15		South Africa	1	
16		Turkey		1
17		UK	1	
18		USA	1	
19		Total	s 12	
20				°

As you can see the function is:

=COUNT(C5:C18)

• This function tells Excel to display the number of cells containing a value within the range **C5:C18**.

NOTE: If you made a mistake, click on cell C19 and press the Del key. Then

try again.

• Use the same technique to count up the number of people who could not attend, and display the value in cell **D19**.

The COUNTA function

- Used to count the number of cells within a range that are not empty.
- Click on the **Counta** worksheet tab.

23								and the second second	
14 + +	M	Sum 🖌	Average 🦼	Max	Min	Count	Counta	Countblank	/ If / 🖓 /
Ready	2								

- You will see data that contains a mixture of numbers (1) and letters (x). The Count function would only count up the number of cells containing numbers, whereas Counta will count the number of cells containing numbers and letters.
- Click on cell C19.
- Click on the **More Functions** icon (contained within the **Function Library** section of the **Formulas** tab).

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		Function Library	Statis	tical 🔸	AVEDEV
	C19	$ f_x$		neering 🕨	AVERAGE
	А	В	C 🚺 Cube		AVERAGEA
1			[6 Infor	mation 🕨	AVERAGEIF
2		Delegates attending the meeting			AVERAGEIFS
3		Delegate combine	Durant		BETADIST
4		Delegate country	Present		BETAINV
5		Australia	X		BINOMDIST
6		Brazil	1		CHIDIST
7		Canada	1		CHIINV
8		China			CHITEST
9		Cyprus	x		CONFIDENCE
10		Greece	1		CORREL
11		India	1		COUNT
12		Ireland	x		COUNTA
		NI 7 I I	4		coonn

• From the drop down displayed, select **Statistical**. From the submenu select **Counta**. This will display the **Functions Arguments** dialog box, as illustrated.

Function Arguments	? 🛛
COUNTA Value1 Value2	<u>E17:C18</u> = {1;1} () = number
Counts the number of cell	= 2 s in a range that are not empty.
	Value1: value1, value2, are 1 to 255 arguments representing the values and cells you want to count. Values can be any type of information.
Formula result = 2	
Help on this function	OK Cancel

• If necessary move the dialog box to one side and then select the cell range **C5:C18**, as illustrated.

Function Arguments	? 🗙
COUNTA	
Value1	C5:C18 = {1;1}
Value2	= number
	= 2
Counts the number of cell	s in a range that are not empty.
	Value1: value1, value2, are 1 to 255 arguments representing the values and cells you want to count. Values can be any type of information.
Formula result = 2	
Help on this function	OK Cancel

• Click on the **OK** button and you will see the following.

		· · · · · · · · · · · · · · · · · · ·		
	C19	✓	5:C18)	
	А	В	С	D
1				
2		Delegates attending the mee	ting	
3				_
4		Delegate country	Present	
5		Australia	x	
6		Brazil	1	
7		Canada	1	
8		China		
9		Cyprus	x	
10		Greece	1	
11		India	1	
12		Ireland	x	
13		New Zealand	1	
14		Pakistan	1	
15		South Africa	x	
16		Turkey		
17		UK	1	
18		USA	1	
19		Number of delegates atten	ding: 12	
20				

• As you can see the function has counted every instance of a number or letter within the specified cell range.

The COUNTBLANK function

- Used to count empty cells within a cell range.
- Click on the **Countblank** worksheet tab.



- Click on cell C19.
- Click on the **More Functions** icon (contained within the **Function Library** section of the **Formulas** tab).

0) 🖬 🤊	* (H *) =			Fun	ctions.x	lsx - Microsoft Excel
0	Home	Insert Page Layout Formulas Data	Review	Viev	v Developer	Acr	obat
1	fx 1	Σ 🗑 🗑 🖻 🖬 🚺		F		De De	fine Name ▼ 🗄 🛱
0	Contraction of the		kup & Math	M	ore Name		e in Formula 🛀 🔤 😤
	nction	 Used T T T Time T Refe 	erence * & Trig *	Funct	ions - Manage	r 🔡 Cri	eate from Selection 🔗
		Function Library			Statistical	A	VEDEV
	C19	▼ (f_x		101	Engineering •	A	VERAGE
	А	В	С		<u>C</u> ube	A	VERAGEA
1				Ó	Information >	A	VERAGEIF
2		Delegates attending the meeting				A	VERAGEIFS -
3		- •	_			в	ETADIST
4		Delegate country	Present			в	ETAINV
5		Australia	1			-	INOMDIST
6		Brazil	1				HIDIST
7		Canada	1				
8		China					HIINV
9		Cyprus	1				HITEST
10		Greece	1				ONFIDENCE
		India	1			C	ORREL
11			_			C	OUNT
12		Ireland	1			c	
13		New Zealand	1			C	OUNTBLANK
1/1		Pakistan	1			-	OUNTE

• From the drop down displayed, select **Statistical**. From the submenu select **Countblank**. This will display the **Functions Arguments** dialog box, as illustrated.

Function Ar	rguments ? 🔀
	(
Range	C17:C18 (1)
	= 0
Counts the nu	mber of empty cells in a specified range of cells.
	Range is the range from which you want to count the empty cells.
Formula result	= 0
<u>Help on this fu</u>	nction OK Cancel

• If necessary move the dialog box to one side and then select the cell range **C5:C18**, as illustrated.

Function Ar	guments	? 🛛
COUNTBLANK	<]
Range	C5:C18 = {1;1	}
Counts the nu	= 0 mber of empty cells in a specified range of cells. Range is the range from whit	ch you want to count the empty cells.
Formula result	= 0	
Help on this fu	nction	OK Cancel

• Click on the **OK** button and you will see the following.

<u> </u>		*		
	C19		C18)	
	А	В	С	
1				
2		Delegates attending the meeting		
3				
4		Delegate country	Present	
5		Australia	1	
6		Brazil	1	
7		Canada	1	
8		China		
9		Cyprus	1	
10		Greece	1	
11		India	1	
12		Ireland	1	
13		New Zealand	1	
14		Pakistan	1	
15		South Africa	1	
16		Turkey		
17		UK	1	
18		USA	1	
19		Number of delegates absent	2	ļ

• As you can see the function has counted every instance an empty cell within the specified cell range.

The Round function

- This function rounds a number to a specified number of digits.
- Click on the Round worksheet tab.
- Click on cell D3.
- Click on the Formulas tab.



• Click on the **Math & Trig** button and from the drop down displayed select the **Round** command, as illustrated.

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	Home	Insert	Page Lay	out	Formula	as	Data	Revi	iew	Viev	v (Developer	Acrobat		
		∑ DSum Recent ✓ Used ▼		Logical Function	. .		Lookup Reference		Mat A Trie	h Mo g - Funct		Name Manage	Define Na fr Use in For r P Create fro Defined Nam	rmula * m Selection	. 0 040
	F3	•	6	f _x	,					RADIAN	S				
	A	В	С	D			E			RAND			н		Τ
1										ROMAN					
2										ROUND					_
3			22.98476				no decir								
4			22.98476				1 decim			ROUND		D(number	,num_digits)		
5			22.98476		Rou	ind to	2 decim	al		ROUND					
6			22.98476		Rou	und to	3 decim	al		SERIESS		ber of digi	ber to a specifie ts.	·a	
7			22.98476		Rou	ind to	4 decim	al		SIGN	0.0				
8			22.98476		Rou	und to	5 decim	al			🕜 Pr	ess F1 for	more help.		
9										SIN					
10										SINH					

• This will display the **Function Arguments** dialog box.

Function Argum	ents 2 X	
ROUND Number Num_digits	number	
Rounds a number	= r to a specified number of digits. Number is the number you want to round.	
Formula result = <u>Help on this func</u>		

- Click within the **Number** section of the dialog box and enter the cell reference **C3**.
- Click within the **Num_digits** section of the dialog box and enter the number **O**, as illustrated.

Function Argum	ents		
ROUND			
Number	C3	=	22.98476
Num_digits	0	=	0

• Your worksheet will now look like this. The data in cell **D3** displays no decimal places. Notice the syntax of the function code displayed above the data.

	D3	-	(f∞ =ROU	JND(C3,0)			
	А	В	С	D	E	F	G	
1								
2								
3			22.98476	23	Round to	no decima	l places	
4			22.98476		Round to :	1 decimal p	place	
5			22.98476		Round to 2	2 decimal p	place	
6			22.98476		Round to	3 decimal p	place	
7			22.98476		Round to 4	4 decimal p	place	
8			22.98476		Round to !	5 decimal p	place	
9								
10								

- Click on cell **D4** and set the cell to display the contents of cell **C4** using **1** decimal place.
- Click on cell **D5** and set the cell to display the contents of cell **C5** to **2** decimal places.
- Click on cell **D6** and set the cell to display the contents of cell **C6** to **3** decimal places.
- Click on cell **D7** and set the cell to display the contents of cell **C7** to **4** decimal places.
- Click on cell **D8** and set the cell to display the contents of cell **C8** to **5** decimal places.

What are 'IF functions'?

• Excel has a number of functions which allow us to evaluate values and make decisions based on the result of the evaluation. The **IF() FUNCTION** is one of these.

IF() SYNTAX

The format (Syntax) of the IF() function is as follows: IF(LOGICAL_TEST, ACTION_IF_TRUE, ACTION_IF_FALSE)

LOGICAL_TEST

The logical_test evaluates an expression to see if it passes the test, i.e. is TRUE or does not pass the test, i.e. is FALSE

Logical operators		Values for Evaluation A=10 B=5 C=15 D=10	Result
	= (Equal to)	A=B	FALSE
		A=D	TRUE
	> (Greater than)	A>B	TRUE
		A>C	FALSE
	< (Less than)	A <b< td=""><td>FALSE</td></b<>	FALSE
		A <c< td=""><td>TRUE</td></c<>	TRUE
	>= (Greater than or Equal to)	A>=B	TRUE
		A>=D	TRUE
		A>=C	FALSE
	<= (Less than or Equal to)	A<=B	FALSE
		A<=C	TRUE
		A<=D	TRUE

• ACTION_IF_TRUE

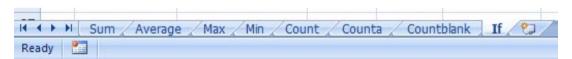
Action_if_true can be a value or an operation. Whichever, the result is placed in the cell which contains the IF() Function if the logical_test is true.

ACTION_IF_FALSE

Action_if_false can be a value or an operation. Whichever, the result is placed in the cell which contains the IF() Function if the logical_test is false.

Using the IF function

• Click on the If worksheet tab.



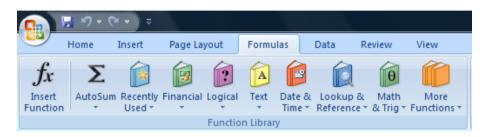
• In cells **J8:J13** we need to display the word **PASS** or **FAIL**, depending on whether the average is over **70%**.

	А	В	С	D	E	F	G	н	I	J
1										
2										
3										
4										
5										
6				SUBJE						
7		STUDENTS	Mathematics	English	History	Geography			Average grades	Passed?
8		Hadiya	68	78	59	59			66	
9		Dai	69	69	69	67			69	
10		Aaron	76	78	79	87			80	
11		Rowan	67	86	58	65			69	
12		Aaliyah	85	77	87	78			82	
13		Gabriela	59	68	78	89			74	

- Click on the cell **J8**.
- Click on the **Logical** icon within the **Function Library** group of the **Formulas** tab.



TIP: Remember that depending on the configuration of your PC, the **Function Library** may look like this.



• This will display a drop down list. Select the **IF** command.

,	$f_x \xrightarrow{\Sigma \text{ AutoSum }}$		۱ 🐒	ogical 🔪 🛛 👰 Lo	ookup & Reference *
	sert	🔂 Recently Used 🛪		AND	& Trig *
	Function prinancial *			FALSE	Functions *
				IF	_
		J ≁ (IFERROR	
	Α	В		NOT	D E
1				OR	
2					
3				TRUE	_
4			f _x	Insert <u>F</u> unction	

• This will display the Function Arguments dialog box.

Function Argument	s		? 🛛
TF			
Logical_test	1	=	logical
Value_if_true	E	=	any
Value_if_false	1	=	any
Checks whether a condi	tion is met, and returns one value if TRU Logical_test is any value or expre		
Formula result =			
Help on this function			OK Cancel

• In the LOGICAL_TEST section of the dialog box, we enter the logical test, i.e. 18>70

In the VALUE_IF_TRUE section of the dialog box, we enter the word PASS.

In the VALUE_IF_FALSE section of the dialog box, we enter the word FAIL.

• Your dialog box will now look like this.

Function Arguments						
IF		1				
Logical_test	18>70 💽 = FALSE					
Value_if_true	"PASS" = "PASS"					
Value_if_false	"FAIL" FAIL"					
= "FAIL" Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE. Value_if_true is the value that is returned if Logical_test is TRUE. If omitted, TRUE is returned. You can nest up to seven IF functions.						
Formula result = FAIL						
Help on this function	OK Cancel]				

• Click on the **OK** button to continue. Your screen will now look like this.

		SUBJE	CTS			
STUDENTS	Mathematics	English	History	Geography	Average grades	Passed?
Hadiya	68	78	59	59	66	FAIL
Dai	69	69	69	67	69	
Aaron	76	78	79	87	80	
Rowan	67	86	58	65	69	
Aaliyah	85	77	87	78	82	
Gabriela	59	68	78	89	74	

• Use the normal Excel drag techniques to extend this function to the cells **I9:J13**. Your screen will now look like this.

		SUBJE	CTS			
STUDENTS	Mathematics	English	History	Geography	Average grades	Passed'
Hadiya	68	78	59	59	66	FAIL
Dai	69	69	69	67	69	FAIL
Aaron	76	78	79	87	80	PASS
Rowan	67	86	58	65	69	FAIL
Aaliyah	85	77	87	78	82	PASS
Gabriela	59	68	78	89	74	PASS

• Save your changes and close the workbook.

CHARTS

Inserting a column chart

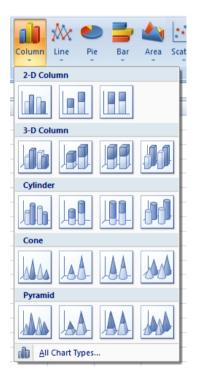
- Open a workbook called **Chart**.
- If necessary, click on the **Column Chart** worksheet tab (at the bottom-left of your screen).



- Click within the table of data.
- Click on the **Insert** tab and you will see the **Charts** group displayed within the Ribbon.



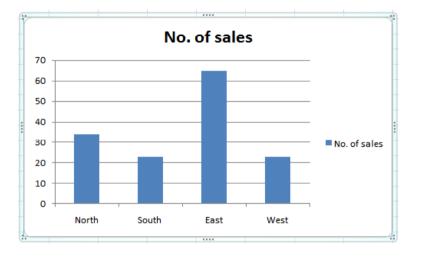
• Click on the **Column** icon and you will see a drop down displaying a range of column chart options.



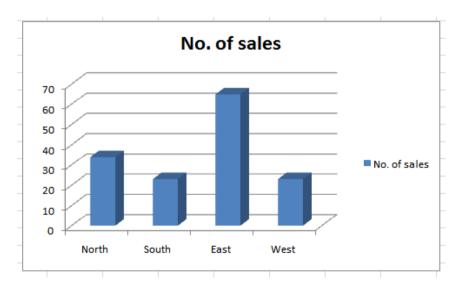
• Click on the first option, the 2-D Clustered format, as illustrated.

2-D Co	blumn
dh	
3-D C	Clustered Column
Ar	Compare values across categories by using vertical rectangles.
Cyline	Use it when the order of categories is not important or for displaying
	item counts such as a histogram.

• You will see the following chart inserted into your worksheet.



• Click on the **Undo** icon (top-left of your screen), and experiment with inserting other types of column chart such as a **3-D chart**, as illustrated below.

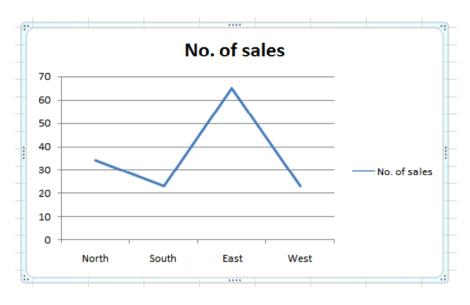


Inserting a line chart

• Click on the Line Chart worksheet tab at the bottom of your screen.

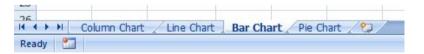


• Experiment with inserting different types of line chart. An example is illustrated below.

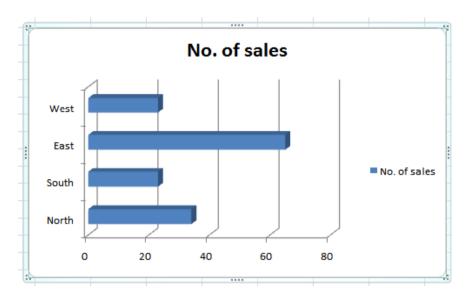


Inserting a bar chart

• Click on the **Bar Chart** worksheet tab at the bottom of your screen.



• Experiment with inserting different types of bar chart. An example is illustrated below.

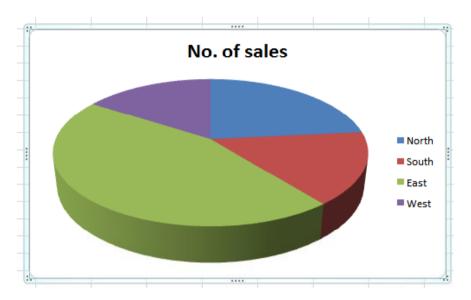


Inserting a pie chart

• Click on the **Pie Chart** worksheet tab at the bottom of your screen.



• Experiment with inserting different types of pie chart. An example is illustrated below.



• Save your changes and close the workbook.

Resizing a chart

- Open a workbook called Chart Manipulation.
- To resize a chart click on it to select it.
- Move the mouse pointer to one of the four corners of the chart. You will notice that the mouse pointer changes to the shape of a diagonal line with an arrow at each end. When you see the mouse pointer change, press the mouse button and while keeping the button pressed move diagonally across the screen. Move away from the centre of the chart to make the chart larger and toward the centre of the chart to make the chart smaller. When you release the mouse button the chart will be resized.

Deleting a chart

- Select the chart and press the **Del** key.
- Save your changes and close the workbook.

Chart title or labels

• Open a workbook called Modifying charts.

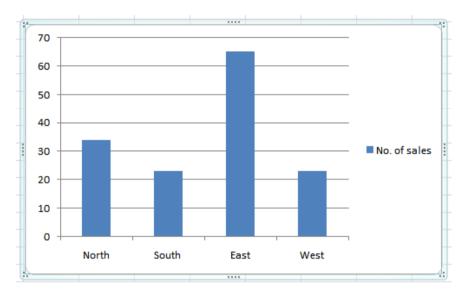
• If necessary, click on the **Modifying a Chart** worksheet tab (at the bottomleft of your screen).

26 II ← → II Modifying a Chart Column C

• You can see a column chart displayed within the workbook. Select the chart title, as illustrated.



• Press the **Del** key to remove the chart title. Your chart will now look like this.



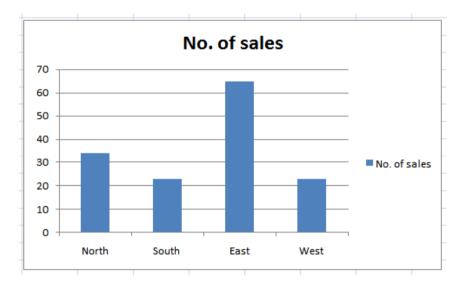
 To insert a chart title, click on chart and then click on the Layout tab. Click on the Chart Title icon within the Layout Ribbon.



Select the required option from the drop down list displayed, such as Above Chart.

Chart Title *	Axis Legend Data Data Titles * * Labels * Table *
	None Do not display a chart Title
	Centered Overlay Title Overlay centered Title on chart without resizing chart
	Above Chart Display Title at top of chart area and resize chart
	Aore Title Options

• Your chart title is once again displayed, as illustrated.



TIP: To modify the chart title text, click within the **Chart Title** and simply edit the text in the normal way. You can also apply text formatting to the Chart Title as required. An example is shown below.



Changing the chart background colour

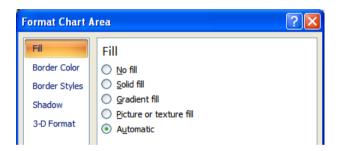
• Click on the chart to select it. Right click over an empty part of the chart background, and you will see a popup menu displayed.

X	Cut			
6	Сору			
8	Paste			
2	Reset to Match Style			
Α	<u>F</u> ont			
ıb.	Change Chart Type			
2	S <u>e</u> lect Data			
۱.	Move Chart			
	3-D <u>R</u> otation			
弡	<u>G</u> roup			
۹.	Bring to Front			
•	Send to Bac <u>k</u>			
	Assig <u>n</u> Macro			
	Format Chart Area			

• Click on the Format Chart Area command.

TIP: If you do not see this command, right click on a different, empty part of the chart, until you do see this command.

• You will see the Format Chart Area dialog box displayed.



• If necessary, click on the **Solid fill** button and you will see extra controls displayed within the dialog box.

Format Chart Area 🔹 💽							
Fill	Fill						
Border Color	◯ <u>N</u> o fill						
Border Styles	Solid fill						
Shadow	O Gradient fill						
3-D Format	<u>Picture or texture fill</u> <u>Au</u> tomatic						
	<u>C</u> olor: 🔇 🗸						
	Transparency: 🗍 🕺 🗘						

• Click on the **down arrow** next to the **Color** control and select a light colour from the options displayed.



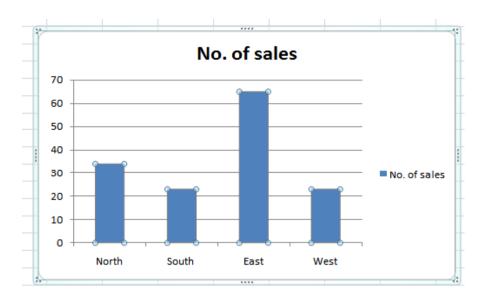
- No. of sales
- Click on the **Close** button to apply the colour, as illustrated below.

Changing the column, bar, line or pie slice colours in a chart

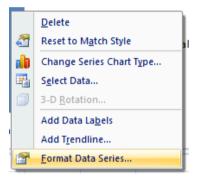
• Click on the second worksheet tab, called Column Chart.



• Click on one of the columns within the chart. You should see all the columns are selected, as illustrated.



• Right click over one of the selected columns and from the popup menu displayed select the **Format Data Series** command.



• This will display the Format Data Series dialog box.

Format Data Ser	Format Data Series 🛛 ? 🗙							
Series Options Fill Border Color Border Styles Shadow 3-D Format	Series Options Series Qverlap Separated O% Overlapped O% Cap Width No Gap Large Gap 150%							
	Plot Series On Primary Axis Secondary Axis							

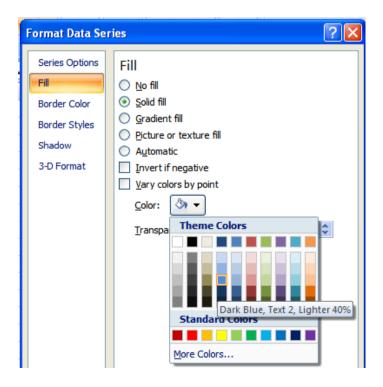
• Click on the **Fill** command within the dialog box, as illustrated.

Format Data Series 🛛 🛛 🔀					
Series Options	Fill				
Fill	◯ <u>N</u> o fill				
Border Color	Solid fill				
Border Styles	O Gradient fill				
Shadow	<u>Picture or texture fill</u> <u>Automatic</u>				
3-D Format	Invert if negative				
	Vary colors by point				

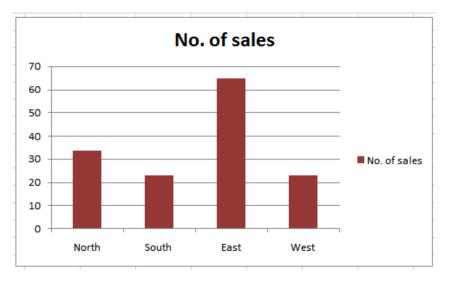
• Click on the **Solid fill** command and extra controls will be displayed, as illustrated.

Format Data Se	Format Data Series 🛛 🥐					
Series Options Fill Border Color Border Styles Shadow 3-D Format	Fill No fill ③ Solid fill ④ Gradient fill ● Picture or texture fill ▲ utomatic Invert if negative Vary colors by point Color: ① ▼ Iransparency:					

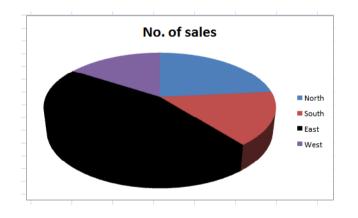
• Click on the **down arrow** in the **Color** section and select a colour for your columns.



• When you click on the **Close** icon the selected colour will be applied, as illustrated.



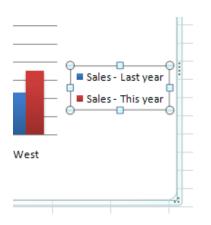
- Click on the Line Chart worksheet tab and change the colour of the line.
- Click on the **Bar Chart** worksheet tab and change the colour of the bars.
- Click on the **Pie Chart** worksheet tab to display the pie chart. The whole point of a pie chart is that each segment of the pie chart should be a different colour. Bearing this is mind click once on the pie chart to select all the segments within the pie chart. Then click again on a particular segment to select just that segment. At this point you can then right click and change the colour of just that segment. An example is illustrated below.



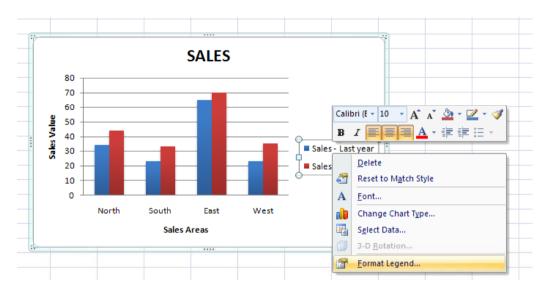
• Save your changes and close the workbook.

Modifying the legend fill colour

- Open a workbook called Legend.
- Select the legend within the chart, as illustrated.



• Right click over the selected legend and from the popup menu displayed select the **Format Legend** command.



• This will display the Format Legend dialog box, as illustrated.



• Select the Fill tab. Select the Solid fill button and you will see the following.

Format Legend	? 🗙
Legend Options Fill Border Color Border Styles Shadow	Fill No fill Solid fill Gradient fill Picture or texture fill Automatic Color: Iransparency:

• Click on the **down arrow** in the **Color** control and select a colour as illustrated below.

Format Legend	? 🔀
Legend Options Fill Border Color Border Styles Shadow	Fill No fill Solid fill Gradient fill Picture or texture fill Automatic Color: Transpa Theme Colors Theme Colors More Colors

- Click on the **Close** button to apply the formatting and close the dialog box.
- If you have time try experiment with some of the other options within the **Fill** section of the **Format Legend** dialog box, such as **Gradient Fills** or adjusting the fill transparency.

Transparency:	 87%	*

• Save your changes and close the workbook.

Changing the chart type

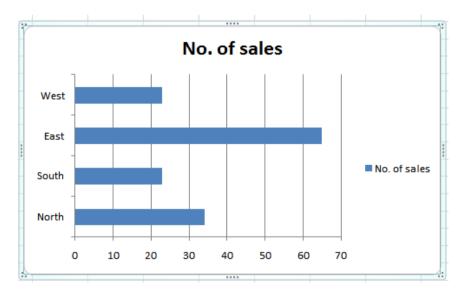
Open a workbook called Changing charts. This workbook contains a column chart. Click on the chart to select it. Click on the Design tab. Click on the Change Chart Type icon displayed within the Type group of the Design Ribbon.



• This will display the **Change Chart Type** dialog box.

Change Chart Type	28
🚞 Templates	Column
Column	
🖄 Line	
🕒 Pie	
E Bar	
🕅 Area	
🔅 X Y (Scatter)	
🕍 Stock	
🐻 Surface	Line
Ooughnut	
👫 Bubble	
🙍 Radar	Pie
Manage Templates	Set as Default Chart OK Cancel

• Select a different type of chart, such as a **Bar** chart and then click on the **OK** button.



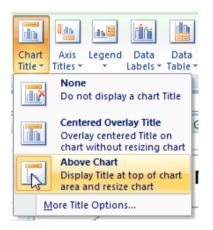
- Experiment with applying different types of chart.
- Save your changes and close the workbook.

Modifying charts using the Layout tab

- Open a workbook called Formatting Charts.
- Select the chart and then click on the Layout tab.



- The Layout tab includes many options for controlling how the various chart elements are displayed.
- Click on the Chart Title button in the Labels group of the Ribbon. A menu will be display allowing you to control where or if the chart title is displayed. The default is Above Chart, try selecting the other options and observe the effect on the chart.



• Click on the **Axis Titles** button in the **Labels** group of the Ribbon. A menu will be display allowing you to control how the labels for each axis are displayed. Experiment with some of the available options and view their effect on the chart.



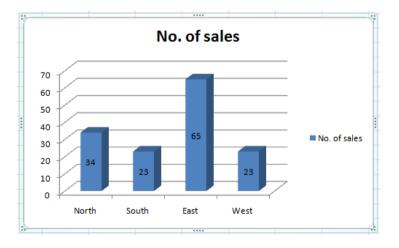
• Click on the **Legend** button in the **Labels** group of the Ribbon. A menu will be display allowing you to control where the chart legend is displayed. Experiment with some of the available options and view their effect on the chart.

Legend	Data Data Labels Table T	Axes Gr
	None Turn off Legend	
	Show Legend at Show Legend ar right	-
	Show Legend at Show Legend ar align	
in an	Show Legend at Show Legend ar left	
	Show Legend at Show Legend ar bottom	
	Overlay Legend Show Legend at the chart withou	right of
	Overlay Legend Show Legend at the chart withou	left of
M	ore Legend Optio	ns

• Click on the **Data Labels** button in the **Labels** group of the Ribbon. A menu will be displayed allowing you to choose if labels should be applied to data in the chart.

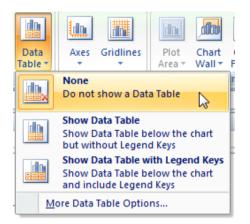
Data Labels *	Data Table •	Axes	Gridlines			
-i îz	None Turn off selectio	f Data La n	bels for 😽			
	Show Turn on selectio	i Data Lal n	bels for			
More Data Label Options						

• Click on the **Show** option. The chart should now look something like this.



Notice that each column is now labelled with its value.

• Click on the **Data Table** button in the **Labels** group of the Ribbon. A menu will be display allowing you to show the data used to create the chart.



• Click on the **Show Data Table with Legend Keys** option. A small table will be displayed below the chart containing the relevant data.



• Click on the **Gridlines** button in the **Axes** group of the Ribbon. A menu will be display allowing you to control how the gridlines for each axis are displayed. Experiment with some of the available options and view their effect on the chart.

Gridlines	Plot Area •	Chart Wall •	Chart Floor •	3-D Rotation	Trendline Lines Up/Down Error Bars * Bars *
Primary Horizontal Gridlines Image: Primary Vertical Gridlines					None Do not display Horizontal Gridlines
н	I	J		K dhe	Major Gridlines Display Horizontal Gridlines for Major units
sales	6				Minor Gridlines Display Horizontal Gridlines for Minor units
				rin	Major & Minor Gridlines Display Horizontal Gridlines for Major and Minor units
				<u>N</u>	ore Primary Horizontal Gridlines Options

• Close the workbook and save any changes you may have made.

Copying and moving charts within a worksheet

- Open a workbook called Copying and moving charts 1.
- Click on the chart to select it.
- To move the chart within the worksheet, click on the chart and drag the chart to a new position in the worksheet.
- To copy the chart within the worksheet, click on the chart to select it and press Ctrl+C to copy the chart to the Clipboard. Deselect the chart and then press Ctrl+V to paste the chart from the Clipboard. You should now see two copies of the chart. You can move them so that they are not layered on top of each other.

Copying and moving charts between worksheets

- Click on the chart to select it.
- To copy the chart to another worksheet within the workbook, click on the chart to select it and press Ctrl+C to copy the chart to the Clipboard.
- Click on the **Sheet2** tab at the bottom of the worksheet.



- Press **Ctrl+V** to paste the chart from the Clipboard. You can move the chart if required within this worksheet.
- To move the chart to another worksheet within the workbook, click on the Sheet1 tab at the bottom of the worksheet. Click on the chart to select it and press Ctrl+X to cut (i.e. move) the chart to the Clipboard.

- Click on the **Sheet3** tab at the bottom of the worksheet.
- Press **Ctrl+V** to paste the chart from the Clipboard. You can move the chart if required within this worksheet.

Copying and moving charts between workbooks

 Select a chart within the workbook. Press Ctrl+C to copy the chart to the Clipboard. Open a second workbook called Copying and moving charts 2. Press Ctrl+V to paste the chart into the second workbook.

NOTE: To move a chart between workbooks, use the same procedure, but **Cut** rather than **Copy** the chart, using the **Ctrl+X** keyboard shortcut for cutting a selected item to the Clipboard.

• Close all open workbooks and save any changes you have made.

Customising Excel

Modifying basic Excel options

• You can customize the way Excel looks and performs. To do this click on the **Microsoft Office button** and within the dialog box displayed click on the **Excel Options** button (bottom-right of the dialog box).

Excel Options	X Exit Excel

• This will display the Excel Options dialog box.

Excel Options		? 🛛
Popular Formulas Proofing	Change the most popular options in Excel. Top options for working with Excel	
Save Advanced Customize Add-Ins Trust Center	 Show Mini Toolbar on selection () Enable Live Preview () Show Developer tab in the Ribbon () Always use ClearType Color scheme: Blue ScreenTip style: Show feature descriptions in ScreenTips 	
Resources	Create lists for use in sorts and fill sequences: Edit Custom Lists When creating new workbooks Use this font: Body Font Font size: 11 Default view for new sheets: Normal View Include this many sheets: 3 Personalize your copy of Microsoft Office	
	User name: David Murray Choose the languages you want to use with Microsoft Office: Language Settings	
	ОК	Cancel

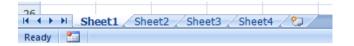
• You can use this to customise items such as the type of font used, the font size used and the number of worksheets displayed within a new workbook.

When creating new workbooks								
Use this fo <u>n</u> t:	Body Font	*						
Font si <u>z</u> e:	11 👻							
Default view for new sheets:	Normal View 🗸							
Include this many <u>sheets</u> :	3							

• Try altering the number of worksheets contained within a new workbook to 4 rather than 3.

Include this many sheets:	4	\$	
---------------------------	---	----	--

Then close the dialog box and press **Ctrl+N** to create a new workbook. You should see 4 worksheets, as illustrated.



Close the new workbook without saving any changes you have made.

Reset the default for new workbooks, back to 3 worksheets per workbook.

 Re-open the Excel Options dialog box and view the Popular options. Towards the bottom of the dialog box you will see a section allowing you to personalise your copy of Microsoft Office. If there is no name displayed here, insert your name. If someone else's name is displayed, replace it with your name. This 'user name' information can be used by many application programs to automatically insert your details in to a document.

Personalize your copy of Microsoft Office						
<u>U</u> ser name:						

• Click on the **Save** option (displayed down the left side of the dialog box).

Excel Options		
Popular Formulas	Customize how workbooks are saved.	
Proofing	Save workbooks	
Save	Save files in this format: Excel Workbook (*.xlsx)	
Advanced	Save AutoRecover information every 10 🔹 minutes	
Customize	AutoRecover file location: C:\Documents and Settings\David Murray\Application Data\Microsoft\Excel\	
Add-Ins	Default file location: C:\Documents and Settings\David Murray\My Documents	
Trust Center	AutoRecover exceptions for: 🕼 Freezing.xisx	
Resources	Disable AutoRecover for this workbook only	
	Offline editing options for document management server files	
	Save checked-out files to: ① ② The server drafts [ocation on this computer ① The <u>w</u> eb server	
	Server drafts location: C:\Documents and Settings\David Murray\My Documents\SharePoint Drafts\	כ
	Preserve visual appearance of the workbook	
	Choose what colors will be seen in previous versions of Excel: ①	

You can use this page to set the default folder location to be used when saving your workbooks. Make a note of the path displayed within the **Default file location** section.

Default file location:

C:\Documents and Settings\David Murray\My Documents

Change this to $C:\$ and then click on the **OK** button., which will mean that in future Excel will, by default open files from the root folder and also save files to the root folder.

To see the effect of the new default folder location, press Ctrl+O to display the **Open** dialog box. You will notice that by default the root folder is displayed (C:\).

Use the method outlined above to reset the default folder back to its original location.

- As you can see there are lots more useful options that you can customise to make your use of Excel easier and more productive. If you have time investigate some of the other customisation options available.
- Before you move on, click on the **Resources** button (within the left part of the dialog box). As you can see this has an option that allows you to check for updates.

Popular	Contact Microsoft, find online resources, and maintain health and relia	ability of your Microsoft Office
Formulas	programs.	
Proofing	get updates	Check for <u>Updates</u>
Save	Get the latest updates available for Microsoft Office.	
Advanced	run Microsoft Office Diagnostics	<u>D</u> iagnose
Customize	Diagnose and repair problems with your Microsoft Office programs.	
Add-Ins	contact us	<u>C</u> ontact Us
Trust Center	Let us know if you need help, or how we can make Microsoft Office better.	
Resources	activate Microsoft Office	Activate
	Activation is required to continue using all the features in this product.	
	go to Microsoft Office Online	<u>G</u> o Online

• Close the dialog box before continuing.

Minimising the Ribbon

• Sometimes you want 'more writing space'. To help achieve this you can right click over the Ribbon and from the popup menu displayed, click on the **Minimize the Ribbon** command.



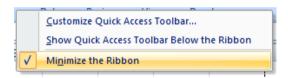
• The Ribbon display will change from this.

	17 - (*	7 · C ^a → ₹ Book2 - Microsoft Excel									
	Home In	sert Page Layo	ut Formula	s Data F	Review	View Developer			0 -		
	Calibri	• 11 •	A A =	= = 😽		General 🔹		¦ater insert ≠	Σ		
Paste	BI	<u>u</u> - <u></u>	• <u>A</u> •] (=	≡ ≡ ∉ ∉	• a • •	- % , .00 .00	Conditional Format Cell Formatting * as Table * Styles *	Format *	Sort & Find & Tilter * Select *		
Clipboard	6	Font	Gi	Alignment	5	Number 🕞	Styles	Cells	Editing		

To this.

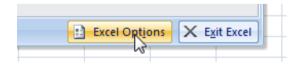
. • 7 •	(" →) ∓		Book2 - Microsoft Excel					
Home	Insert	Page Layout	Formulas	Data	Review	View	Developer	

• To display the Ribbon again, right click over any of the tab commands and from the popup menu displayed, re-click on the **Minimize the Ribbon** command (to remove the tick).



AutoCorrect options

- Microsoft Excel has an AutoCorrect facility that allows common typing errors to be automatically corrected. For instance if you type in 'the' instead of 'the', Microsoft Excel will automatically correct your spelling error.
- To open the **AutoCorrect** dialog box, click on the **Office Button** (top-left of your screen). Click on the **Excel Options** button at the bottom of the dialog box.



• Click on the **Proofing** option, and then click on the **AutoCorrect Options** button.

1	Excel Options	
	Popular	Change how Excel corrects and formats your text.
	Formulas	
	Proofing	AutoCorrect options
	Save	Change how Excel corrects and formats text as you type:

This will display the **AutoCorrect** dialog box.

AutoCorrect: Englis	ı (United Kingdom)	? <mark>×</mark>						
AutoCorrect Aut	Format As You Type Smart T	ags						
Show AutoCo	rrect Options buttons							
Capitalize firs	✓ Correct TWo INitial CApitals ✓ Capitalize first letter of sentences ✓ Capitalize first letter of days							
Correct accid	ental use of cAPS <u>L</u> OCK key							
Replace:	<u>W</u> ith:							
teh	the							
		Add Delete						
		OK Cancel						

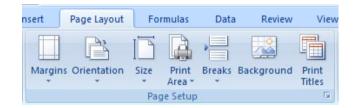
- As you can see this has a number of options such as the ability to correct words where you have accidentally typed in the first two letters in capitals. It will also automatically capitalise the first letter within a sentence and also the first letter within a table cell and the days of the week. A very useful feature is to automatically correct the effect of accidentally pressing the **Caps Lock** key.
- In the lower part of the dialog box is a scrollable section which tells you what Microsoft Excel will act on and change automatically.
- Add some words that you commonly spell incorrectly, into the **Replace** section of the dialog box, along with the correct spelling in the **With** section of the dialog box.

Printing

Worksheet Setup

Worksheet margins

- Open a workbook called **Print setup**.
- Click on the **Page Layout** tab, and from within the **Page Setup** group of the Ribbon, click on the **Margins** icon.



- This will display a drop down from which you can select **Normal**, **Wide** or **Narrow**.
 - Margins Orientation Size Print Breaks Backg Area * Normal 1.91 cm Bottom: 1.91 cm Top: Right: 1.78 cm Footer: 0.76 cm Left: 1.78 cm Header: 0.76 cm Wide Top: 2.54 cm Bottom: 2.54 cm D 2.54 cm Right: 2.54 cm Left: D Header: 1.27 cm Footer: 1.27 cm D Narrow D 1.91 cm Bottom: 1.91 cm Top: Right: 0.64 cm 0.64 cm Left: Header: 0.76 cm Footer: 0.76 cm n Custom Margins...
- Clicking on the **Custom Margins** command displays the **Margins** tab within the **Page Setup** dialog box. You can use this dialog box to set custom top, bottom, left and right margins.

Page Setup		? 🔀
Page Margins Hea	der/Footer Sheet	
	<u>T</u> op: 1.9	He <u>a</u> der: 0.8 😂
Left: 1.8 🗢		Right:
Center on page	Bottom:	Eooter: 0.8
	Print Prin	nt Preview Options
	(OK Cancel

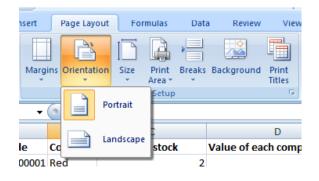
TIP: You can also use this dialog box to set Header and Footer values, as well as options to centre the table on the page vertically and / or horizontally.

Experiment with setting margins.

TIP: Be sure not to make the margin size to small or you may have problems printing the worksheet.

Worksheet orientation

• Click on the **Page Layout** tab, and from within the **Page Setup** group of the Ribbon, click on the **Orientation** icon. You can select either **Portrait** or **Landscape** orientation, as illustrated.



• Try setting the orientation to Landscape. To see the effect in Print Preview mode, press the Ctrl+F2 keyboard shortcut. To return to the previous view, click on the Close Print Preview icon.



• Before continuing reset the orientation back to **Portrait**.

Worksheet page size

• Click on the **Page Layout** tab, and from within the **Page Setup** group of the Ribbon, click on the **Size** icon. You can select the required page size from the drop down options displayed, as illustrated.



Headers and footers

• Click on the **Insert** tab and from within the **Text** group of the Ribbon, click on the **Header & Footer** icon.



• You will see the Header area displayed at the top of the worksheet, as illustrated.

Header				1
Component code	Color	Number in stock	Value of eac	ch component
100001	Red	2		22.99
100002	Red	2		11.50

- Type in the text for you header, such as 'Stock Levels for January'.
- If you scroll down the page you will see the message 'Click to add footer' displayed at the bottom of the worksheet.

Click to add footer	

• Click within the footer area and type in your name. As example is illustrated below.

100048 Green	3	2.00
100049 Green	4	2.10
	David Murray	
Footer		

• To modify a header or footer at any time just click over an existing header or footer and edit as required.

TIP: Remember that to see headers and footers, you may need to click on the **View** tab and then click on the **Page Layout** icon.

Ca	9	- (² -) ≠
9	Home	Insert Page Layo
Normal	Page Layout	Page Break Preview I Custom Views Full Screen
	Wor	kbook Views

To change back to the normal view click on the **View** tab and then click on the **Normal** icon.



Header and footer fields

When you are inserting or editing a footer or header, you will notice that you see the Header and Footer Tools Ribbon. Within this Ribbon is the Header & Footer Elements group, as illustrated below.



- You can use the icons in this section in insert an Excel field, such as the Page Number. The great thing about fields is that they automatically update when required. For instance if you insert a **Page Number** field, then as you add more pages, the page number displayed on each page will increment.
- Another very useful field is the **File Name** field. This displays the file name of the document in your header or footer, when you print, and is very useful when you have printed out a copy of a worksheet and then several months later are trying to remember the file name you used to save the worksheet as.

NOTE: When you insert a field, such as the **File Name** field, you may see the field code rather than the actual file name. When you print the worksheet however, this code is replaced by the actual file name.

- The **File Path** will display the file name and also the path to the folder in which the file is stored.
- Experiment with inserting different fields into your header or footer.

Make sure that you have experimented with all of the following field types:



Page numbering:

Date:

- arei										
[]	- 19	(4 +)	Ŧ				Book	1 - Mic	rosoft I	Excel
	Home	Insert	Page	e Layout	For	nulas	Data	Re	view	View
		#		7	\bigcirc					
Header	Footer *	Page Number	Number of Pages		Current Time	File Path	File Name	Sheet Name	Picture	Format Picture
Header a	& Footer	Header & Footer Elements								

Time:



File name:

-	- (") -	(* *)	Ŧ				Book	1 - Mic	rosoft	Excel
	Home	Insert	Pag	e Layout	For	mulas	Data	Re	view	View
		#		7	\bigcirc					
Header	Footer	Page Number	Number of Pages		Current Time	File Path	File Name	Sheet Name	Picture	Format Picture
Header	& Footer			H	eader & l	Footer E	lements			

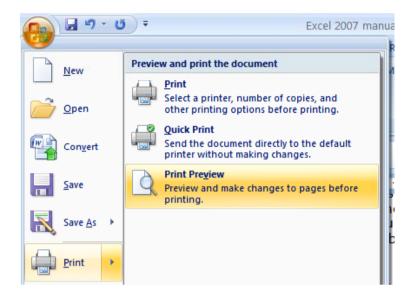
Worksheet name:

(PB)	- 17 -	(4 -)	Ŧ				Book	1 - Mic	rosoft	Excel
	Home	Insert	Pag	e Layout	For	mulas	Data	Re	view	View
		#		7	\bigcirc					
Header	Footer	Page Number	Number of Pages		Current Time	File Path	File Name	Sheet Name	Picture	Format Picture
Header	& Footer			Н	eader & I	Footer E	lements			

NOTE: To remove a header or footer field, select the field you wish to remove and press the **Del** key.

Scaling your worksheet to fit a page(s)

• Click on the **Microsoft Office Button** and then click on the **arrow** next to the **Print** command. From the submenu, select **Print Preview**.



• If you look at the bottom-left of the screen you will notice that in the example shown, the data requires a total of 4 pages to print.



• To close the **Print Preview** view, click on the **Close Print Preview** button



 Excel has a facility that lets you determine how many pages you want the data to print over. If required you can shrink the size of the data so that it all fits on one page. It may be hard to read due to the small type size, but you can do this. Click on the **Page Layout** tab and within the **Scale to Fit** group to display the following options.

Width:	Automatic 👻				
Height:	Automatic 👻				
🖳 Scale:	100% 🛟				
Scale to Fit 🛛 🖓					

Click on the down arrow to the right of the Width control, and select 1 page.

Width:	Automatic 🔤 Gridlines				
Height:	Automatic				
Scale:	1 page				
Scale	2 pages				
Scale	3 pages				
	4 pages				
	5 pages				
12.50	6 pages				
	7 pages V				
13.00	8 pages 0				
13.50	9 pages 0				
14.00	More Pages 0				
14 50	29.00				

Click on the down arrow to the right of the Height control, and select 1 page.

Width:	1 page 🔹 👻	Gridlines
Height:	Automatic 🚽	View
🖳 Scale:	Automatic	1
Scale	1 page	b
-	2 pages	F
	3 pages	- L
	4 pages	
12.50	5 pages	O
13.00	6 pages	o
13.50	7 pages 8 pages	0
14.00	9 pages	0
14.50	More Pa	ges 0
15.00		ьц п0

• Display the worksheet in **Print Preview** view and you should see that the worksheet will now print on a single page.



- Close the **Print Preview** view.
- Save your changes and close the workbook.

Preparing to print a worksheet

Visually check your calculations

- Open a workbook called **Printing**.
- Click on cell **E2**. Clearly the formula within this cell is wrong. The formula it contains is

=C2*F2

It should be:

=C2*D2

Fix the formula.

Always visually check over worksheet data and try to look for formula calculation results that do not make sense.

Displaying gridlines when printing

• To see how the worksheet will look when printed view the worksheet in Print Preview view. To do this click press **Ctrl+F2**. As you can see the worksheet will print without displaying gridlines.

Compoonent code Co	olor NUmberin stock	Value of each component	
100001 84		22.99	
100002 **		11.50	
100005 50		31.92	
100004 54	ad 2	22.67	
100005 54	ed 4	30.50	
100006 #c	ದ ಕಿ	11.00	
100007 0	reen 8	11.50	
100005 0		12.00	
100008 0		12.50	
100010 0		15.00	
100011 0		15.50	
100012 0		34.50	
100014 0		25.00	
100015 0		15.50	
100016 0		38.00	
100017 6		35.50	
100018 8		17.00	
100019 6	lue 5	17.50	
100020 64		15.00	
100021 8	lue 4	15.50	
100022 8		19.00	
100025 5		19.50	
100024 #c		33.99	
100025 #c		22.95	
100026 #0		21.96	
100027 %		2.53	
100028 10		2.50	
100050 #4		2.30	
100031 50	ad la	2.10	
100052 #c	of 1	1.90	
100055 #c	ed 1	1.70	
100054 #c		1.50	
100035 #6		1.50	
100036 0		1.10	
100037 0.		0.30	
100056 0		0.70	
100059 0		1.10	
100040 0		1.30	
100042 0		1.40	
100045 0		1.50	
100044 0		1.60	
100048 0		1.70	
100046 Gr	rcon 7	1.50	
100047 G	rcon 12	1.90	
100046 G		2.00	
100049 01	reon 4	2.10	
L			

• Click on the **Close Print Preview** button to exit from the Print Preview mode.



• Click on the **Page Layout** tab. Within the **Sheet Options** group, click on the **Print** check box under the **Gridlines** heading, as illustrated.

Gridlines	Headings
View	View
V Print	Print
Sheet Op	tions 🛛 🖬

• View the worksheet in **Print Preview** view by pressing **Ctrl+F2**. As you can see the worksheet will now print displaying gridlines.

Compoonent code	Color	NUmber in stock	Value of each component	
Compoonent code 100001 100002	Red			
100002	R86		11.50	
100005	Red			
100004 100005 100005	Red		22.87	
100005	102			
100006	102			
100007	Green		11.50 12.00	
10006	Green			
100009	Green			
100010	Grecen		13.00 13.30	
100012			¢	
100012		þ	14.50	
10015				
100015 100014 100015	Gran		15.50	
100015	G en en		¢	
100017	alue.			
100015	Sluc			
100010	Sluc			
100019	slue		18.00	
100020 100021	slue	4		
100022	Slue -	4	19.00	
100025	Red	4	19.50	
100024	Red	1	55.99	
100025	Red	1	22.95	
100026	Red	55	21.96	
100027	Red	2	8.99	
1000.25	Ref	22	2.55	
1000.29	Red	1		
100050	Red	1	2.50	
100051	Red	1		
1000.52	Red	1	1.90	
100055	Red	1	1.70	
100054	Red	1		
100035	Red	1		
100036	Green		1.10	
100037	Graun		0.90	
100055 100059	Graan		0.70	
1000.59	Graan		1.10	
100040	Green		1.20	
100041			1.30	
100042	Green	33	1.40 1.50	
100045	Green		1.50	
100044 100045	Green			
100045	Green		1.70	
100046		12	1.50	
100047		1		
100048	Genera		2.00	
			2.10	

- Exit the Print Preview view.
- Before continuing, re-click on the **Print** Gridlines check box so that the worksheet will print without displaying gridlines.

Printing titles on every page when printing

• View the worksheet in **Print Preview** view by pressing **Ctrl+F2**. As you can see the top row, containing the column titles is displayed on the first page.

Compoonent code	Color	NUmber in stock	Value of	each component	
100001	Red		2	22.99	
100002	REG		2	11.50	
100005	Red		2	31.99	
100004	Red		2	22.67	
100005	Red		4	10.50	

• Press the **Page Down** key to view the second page. As you can see the columns are displayed without a top row explaining what each column relates to.

100050 White	11	2.20	
100051 White	1	2.30	
100052 White	1	2.40	
100055 White	4	2.50	
100054 White		2.60	

- We need to fix this as it would be very inconvenient to print out a long report and always have to refer to the first page to know what each column relates to. Close the **Print Preview** view.
- Click on the **Page Layout** tab. Within the **Page Setup** group, click on the **Print Titles** icon, as illustrated.

Margins	Orientation	Size	Print Area *	Breaks	Background	Print Titles	Print Titles
		Pag	ge Setup			E.	THEFES

• This will display the Page Setup dialog box.

Page Setup			? 🗙
Page Margins Heade	r/Footer Sheet		
Print <u>a</u> rea: Print titles			
Rows to repeat at top:			E
<u>C</u> olumns to repeat at left:			
Print			
<u>G</u> ridlines	Co <u>m</u> ments:	(None)	~
Black and white Draft guality	Cell <u>e</u> rrors as:	displayed	~
Row and column heading	gs		
Page order O <u>D</u> own, then over O <u>v</u> er, then down			
	Print	Print Previe <u>w</u> Opt	ions
		ОК	Cancel

• If necessary move dialog box so that you can see the title row within the worksheet.

TIP: To move a dialog box, click on the **Title Bar** at the top of the dialog box and while pressing the mouse button, drag with the mouse. When you release the mouse button the dialog box will have moved.

• Click in the Rows to repeat at top box, within the dialog box.

Print titles	
<u>R</u> ows to repeat at top:	

• Click within the top row and your dialog box will look like this.

Page Setup		? 🛛
Page Margins Head	er/Footer Sheet	
Print area:		
<u>R</u> ows to repeat at top:	\$1:\$1	1
Columns to repeat at left:		I
Print		

- Click on the **OK** button to close the dialog box.
- Press **Ctrl+F2** to see the worksheet in **Print Preview** view. As you would expect the title row is displayed across the top of the data.

Compoonent cade	Color	NUmber instock	Value of	each component
100001	Red		2	22.99
100002	ne d		2	1150
100003	Red.		2	51.99
100004	Red.		2	22.87
100005	Red.		4	1050
100006	Red		6	11.00
100007	Green		8	1150
100008	Green		9	12.00
100009	Green		6	12.50
100010	Greecen		7	15.00
100011	Green		4	15.50

 Press the Page Down key to view the second page, and now, as you can see this page also displays a title row at the top of the data.

Compoonent code Colo		Value of each component	
100050 White		11	2.20
100051 Whit		1	2.30
100052 Whit	-	1	2.40
100053 White	-	4	2.50
100054 Whit	•	4	2.50
100055 White	-	5	2.70
100056 Whit	•	6	2.50
100057 Whit	•	3	2.90
100058 Whit	e	+	3.00
100059 Whit		5	5.10
100060 Whit	-	2	5.20
100061 Whit		6	3.30
100062 Whit	•	5	3.40

• Press **Esc** to exit from Print Preview view.

TIP: You can use the same technique the repeat both rows and columns on every page.

Printing the Excel row and column headings

• Click on the **Page Layout** tab. Within the **Sheet Options** group, click on the **Print** check box under the **Headings**, as illustrated.

Gridlines	Headings	
View	View	
🔲 Print 🔽 Print		
Sheet Options 🛛 🗟		

• Press **Ctrl+F2** to view the worksheet in **Print Preview** view. As you can see the row and column heading are displayed, and would print like this.

	A	5	c	0
1	Compoonent code	Color	NUmber in stock	Value of each component
2	100001	Red	2	22.99
3	100002	REG.	2	11.50
4	100003	Red	2	51.99
5	100004	Red	2	22.87
6	100005	Red	4	10.50
7	100006	Red	6	11.00
8	100007	Green	5	11.50
9	100008	Groon	9	12.00
10	100009	Groon	6	12.50
11	10001.0	Greecen	,	13.00

• Press Esc to exit from Print Preview view.

Spell checking

- Press **F7** to start the spell checker (or click on the **Review** tab and click the **Spelling** icon).
- You will see the **Spelling** dialog box displayed. Follow the onscreen prompts.

Spelling: English (U.S.)	? 🛛
Not in <u>D</u> ictionary:	
REd	Ignore Once
	Ignore All
	Add to Dictionary
Suggestions:	
Red A	hange
Rid Redo	Change All
Reds	AutoCorrect
Dictionary language: English (U.S.)	
Options Undo Last	Cancel

• You may see the following dialog box, in which case click on the **Yes** button.

Microsof	t Office Excel	
Do you want to continue checking at the beginning of the sheet?		
	Yes <u>N</u> o	

Previewing a worksheet

- Always view a workbook in **Print Preview** mode prior to printing it. It allows you a quick visual check over how the worksheet will look when printed.
- Click on the **Microsoft Office Button** and then click on the arrow next to the **Print** command. From the submenu, select **Print Preview**.
- Save your changes and close the workbook.

Comparing workbooks side by side

- This feature allows you to compare two versions of a workbook, side by side.
 Open a document called Side by Side 1. Open a second document called
 Side by Side 2.
- Click on the **View** tab and click on the **View Side by Side** command (located within the **Window** group under the **View** tab).



This will display the two workbooks side by side. As you scroll down one worksheet, the other worksheet also scrolls down the screen. Try scrolling through each worksheet to practice using this feature.

• Close both worksheets before continuing.

Zooming the view

• Open a workbook called **Zoom**. This workbook contains text of various sizes, and may be unreadable at the normal viewing zoom level. You can use the Zoom control to magnify the display of data on the screen (or to reduce the size of data of the screen). You can see the **Zoom** slider control displayed at the bottom-right of your screen.



- Click on the **Plus** or **Minus** button, or drag the slider using the mouse to adjust the zoon levels.
- If you click on the **Zoom** value (100% in the example show above), you will display the **Zoom** dialog box. You can use this to set exact zoom levels.

Zoom ? 🔀
Magnification
◯ 20 <u>0</u> %
<u> 100%</u>
<u>○ 7</u> 5%
○ <u>5</u> 0%
<u>○ 2</u> 5%
 Eit selection
○ <u>C</u> ustom: 100 %
OK Cancel

• Before continuing set the **Zoom** level back to **100%** and close the workbook.

Printing options

- Open a workbook called **Printing options**.
- To print the entire worksheet, click on the **Microsoft Office button** and then click on the **Print** icon. This will display the **Print** dialog box.

TIP: The keyboard shortcut to display the **Print** dialog box is **Ctrl+P**.

Print	? 🛛
Printer Name: Status: Status: Idle Type: Canon iP4300 Where: USB001 Comment: Status:	Properties Find Printer
Print range • <u>All</u> • Page(s) <u>From</u> : <u> •</u> <u>Io</u> :	Copies Number of <u>c</u> opies:
Print what Selection Entire workbook Active sheet(s) Table Ignore print areas Ignore brint areas	, j₂ , j₃ □ Collate
Preview	OK Cancel

• Within the **Print Range** group of the dialog box, the default is **AII**. Use this option to print the entire worksheet.



 If you only want to print certain pages, click on the Pages button and then specify the pages you want to print.

O Page(s)	Erom:	*	<u>T</u> o:	\$

• If you want to print multiple copies of a worksheet, you can enter a number into the **Number of Copies** section of the dialog box. In the example illustrated we have chosen to print five copies.

Copies		
Number of <u>c</u> opies:	5 🗘	
L S	Collate	
ОК	Cancel	

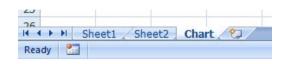
• If you select a range of data, prior to opening the **Print** dialog box, then the **Selection** button will be active within the **Print What** group of the dialog box, allowing you to just print the selected range.

Print what	
Selection	O Entire workbook
Active sheet(s)	🔿 Table
Ignore print areas	

• If your workbook contains multiple worksheets and you want to print all the individual worksheets, click on the **Entire workbook** button.

- Investigate these options, but do not actually print anything, as you should always try and minimize wasted paper.
- Click **Cancel** to close the **Print** dialog box.

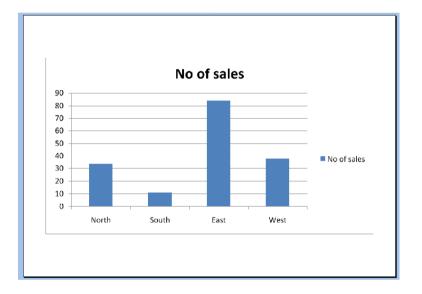
• Click on the Chart worksheet tab. This worksheet contains a chart.



 Click once on the chart to select it. Press Ctrl+P to display the Print dialog box. You should see that the Selected Chart button is selected. Click on the OK button to print the chart.



• The chart should print like this:



TIP: If you print a worksheet, which contains a chart, then the chart will be printed as displayed within the worksheet. You only need to use the method outlined above, if you want to print the chart on a separate page to your worksheet data.

• Close the workbook and save any changes you may have made.