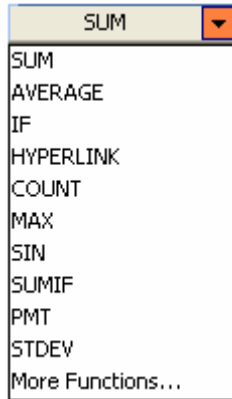




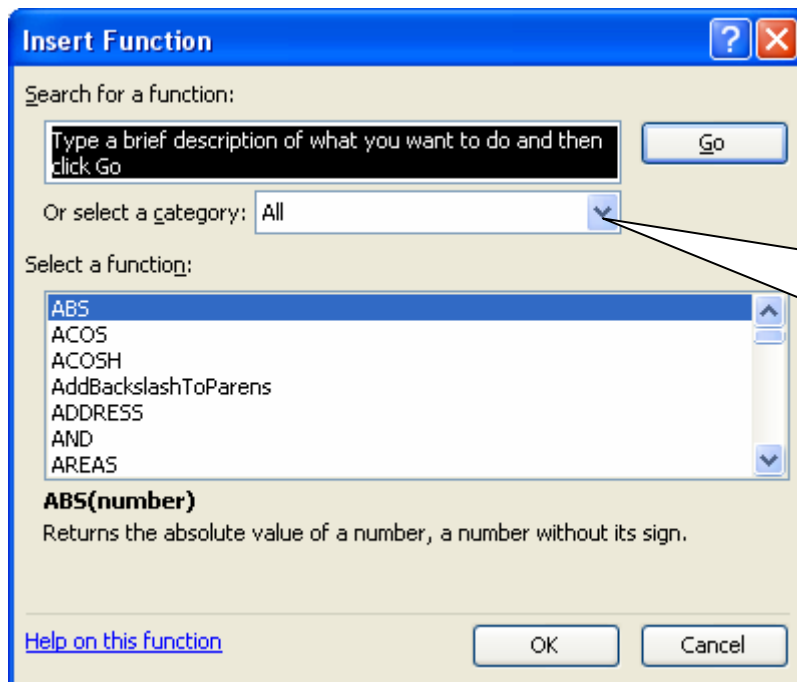
Advanced Features of Excel

Using Advanced Functions within Excel

Excel has many different inbuilt functions that provide an enormous scope for its usage. When an equal sign is entered into a cell the cell address box changes to a function listbox:



The More Functions option at the bottom of this list brings a search box and a full list of available functions:



Each function has been categorized to make finding them easier.

Date Functions

Excel provides an extensive selection of date and time functions. These allow formulae to include references to both dates and times. Since dates in Excel are actually stored as numbers they can easily be used in mathematical equations. The next two tasks illustrate how to use a number of these functions.

The Today and Date Functions

The first exercise shows how to include the current date in a worksheet using the Today function. Using this function each worksheet can always have a date timestamp. The date function is used to ensure that Excel correctly interprets dates. Different countries handle dates in different formats for example American dates are of formatted mm/dd/yy, which is different to the usual Australian date. Since the date function has dates entered in a predefined format of year, month, day it is irrelevant how the dates are displayed.

Function	Purpose
DATE	Returns the number of days from the 1 st Jan 1900 to the entered date.
TODAY	Returns the serial number of today's date.



Task 18



The payroll office have asked you to create a small worksheet that will allow them to enter the birth date of a person and the sheet will calculate the age in years. To do this, open a new worksheet in Excel and type in the sheet shown below. Do not enter any of the figures into the sheet, they all use functions and formulae. The formulae for the cells are:

B3 =TODAY()

B4 =DATE(year,month,day) e.g. to enter the date 6/3/1976 enter =DATE(1976,3,6)

B6 =(B3-B4)/365.25

Enter your birth date into B4. Make the heading for the sheet 14 point bolded Arial and centre as shown. Place your name under the sheet and save it as TASK18. Print as shown, then make a second printing showing the formulae used.

Change the birthday for the person to 3/8/1912 - how old are they?? Print the sheet showing the new birthday.

	A	B	C
1	How Old Are You?		
2			
3	Today's Date	20/09/99	
4	Your Birthday	11/12/73	
5			
6	Your Age	25.8	Years

All figures are generated by a formula.

..... *End of Task 21*

The Now, Weekday and Text Functions

The Now function returns both the current date and time. This is also returned as a number but Excel has the built-in facility to display this number in a date and time format. The Weekday function returns the day of the week as a number with Sunday as day 1. In order to translate this number into the actual day Sunday the text function is added to the weekday function. The following exercise illustrates the use of these three date functions.

Function	Purpose
NOW	Returns the serial number of the current date and time
WEEKDAY	Returns the day of the week corresponding to serial number. The day is given as an integer, ranging from 1 (Sunday) to 7 (Saturday)
TEXT	Converts a value to text in a specific number format



Task 19

Your neighbour is raising beef cattle. He wishes to have a spreadsheet designed, that will allow him to enter the date that his cows are serviced. The sheet will then work out when to check the cattle to see if they are pregnant and the date that the cattle are due to calve.

Open a new worksheet in Excel and enter the data shown below. Do not enter the cells shown in grey, they contain formulae. When entering the formulae place the formulae into column E **before entering** the formulae for column D. The formulae for the sheet are:

- B1 =NOW() format to a date only and centre across columns B and C
- A6 =DATE(2000,1,8)
use this type of formula to enter all dates down to A11
- E6 =A6+21
Copy to E11
- D6 =TEXT(WEEKDAY(E6),"dddd")
Copy to D11
- F6 =A6+283
Copy to F11

	A	B	C	D	E	F
1	Today's Date	March 5, 2000				
2						
3	Table of Gestation Periods for Hereford Cattle					
4						
5	Date of Service	Dam	Sire	Date to Check for Pregnancy		Date Due to calf
6	8-Jan-2000	Summer Day 20	Bramble Larriat	Saturday	29-Jan-2000	17-Oct-2000
7	12-Jan-2000	Cornflower 13	Kaluda Jumbo	Wednesday	2-Feb-2000	21-Oct-2000
8	23-Feb-2000	Juliet 50	Basford David	Wednesday	15-Mar-2000	2-Dec-2000
9	24-Feb-2000	Caroway 120	Carnot Banquish	Thursday	16-Mar-2000	3-Dec-2000
10	3-Mar-2000	Doreen 41	Ohio Clint	Friday	24-Mar-2000	11-Dec-2000
11	3-Apr-2000	Marinda 76	Ohio Diamond	Monday	24-Apr-2000	11-Jan-2001

Format the sheet as shown, place your name at the bottom and save the sheet as TASK19. Print the sheet as shown and reprint showing the formulae.

..... End of Task 19

Logical Functions

Logical functions in Excel are used to test whether certain conditions are true or false. They also allow complicated formula to be written using the AND, OR and NOT operators.

The If Test

Using an **if test** in a worksheet, a statement can be formed that will be used by Excel to branch in one of two directions. For example consider the following test:

```

If test result >= 50 then ← Condition
    Write Pass           ← Result if condition is true
Else
    Write Fail          ← Result if condition is false
End If
    
```

This would be placed into a formula in the following way. Assume that the test result is in cell B5:

```
=IF(B5>=50,"Pass","Fail")
```

The formula has three sections just as the written example above has three sections. The condition $B5 \geq 50$ is written first in the brackets of the IF test. The outcome if the condition is true follows the first comma. The outcome if the condition is false follows the second comma. Notice the quotes on Pass and Fail. All strings of characters must be surrounded by quotes.

The following exercise uses an IF test to determine whether the calves are overdue or not born yet. The test in English would read as:

```

If todays date – due date > 0 then
    Write overdue
Else
    Write not born yet
End if
    
```

Function	Purpose
IF	Returns one value if logical_test evaluates to TRUE and another value if it evaluates to FALSE

The And, Or and Not Operators

The And, Or and Not operators are used to enhance the conditions used in If tests. The And operator is used with more than one condition when both conditions in the test must be true. For example consider the following If test:

```

If Test Result >= 50 and Test Result <=75 Then
    Pass
Else If Test Result > 75 Then
    Credit
Else
    Fail
End If

```

The first condition in this statement says if the result of the test is both greater than or equal to 50 and less than and equal to 75 then the outcome is a pass. The AND stipulates that both conditions must be true.

The OR condition is similar to the AND except that either result can be true for the condition to return true. For example if the example above had the condition Test Result >= 50 or Test Results <=75 then any results that are greater than or equal to 50 would be a pass, as well as any results less than and equal to 75. Using an OR many more true outcomes are usual.

The NOT operator is used to turn a test to the opposite. It is a way of eliminating from a set. For example in a column holding a list of suburbs the test might be If Not Suburb = "Frankston" would find all but Frankston in the column.

Function	Purpose
AND	Returns TRUE if all its arguments are TRUE
OR	Returns TRUE if any argument is TRUE
NOT	Reverses the logic of its argument



Task 20



You are employed as a clerk for the Jara High School. The Computer Teacher has asked you to create a worksheet that will determine if a student has passed or failed their spreadsheet test. To do this, open a new worksheet in Excel. Type in the sheet shown below but do not enter any of the results in column C these require an IF test formula. The formula for the sheet is:

C6 =IF(B6>=50,IF(AND(B6>=75,B6<=100),”Credit”,”Pass”),”Fail”)

This formula can be seen to contain two If tests. The following shows an analysis of the formula:

```

=IF(B6 >= 50,
  IF(AND(B6 >= 75, B6 <= 100,
    "Credit"
  ,
    "Pass"))
,
  "Fail")
    
```

To ensure you understand IF tests look them up in Help and read the Help screens. Format the sheet as shown and after placing your name at the bottom save it as TASK20. Print the sheet as shown and then with formulae displayed.

	A	B	C
1	Introduction to Spreadsheets		
2	Results Semester 1		
3			
4			
5	Student's Name	Test 1	Grade
6	Fred Smith	34	Fail
7	John Jamison	56	Pass
8	Paul Newson	71	Pass
9	Louise Harvey	50	Pass
10	Jennifer Lawson	63	Pass
11	Gayle Kelsie	90	Credit
12	David Grahame	49	Fail
13	Michael Wilson	76	Credit
14	Graeme Peterson	83	Credit

..... *End of Task 20*



Task 21

Create the following sheet in Excel for the North Coast Health Centre to determine their overdue accounts. Do not enter the status, it is generated through a formula. The formula will place the word 'Overdue' in status if the amount owing has not been paid and the days overdue are 30 or 60. If not paid the status becomes 'Still Owing', otherwise it is 'Paid in full'. The formula used is:

$E5 = IF(AND(NOT(D5="Yes"),OR(C5=30,C5=60)),"Overdue",IF(D5="No","Still Owing","Paid in full"))$

The analysis of the formula is shown below:

```

If Not Paid and Days Owing 30 or 60 Then
    Write "Overdue"
Else
    If Not Paid Then
        Write "Still Owing"
    Else
        Write "Paid in Full"
    End If
End If
    
```

Place your name on the bottom of the sheet and save the sheet as TASK21. Print the sheet as shown and then with formulae displayed.

	A	B	C	D	E
1	North Coast Health Centre				
2	Accounts Receivable				
3					
4	Patient's Name	Amount Owing	Days Overdue	Paid	Status
5	Harold Wilson	68.90	30	No	Overdue
6	Amanda Jamison	120.80	60	No	Overdue
7	Mark Jones	35.60	0	Yes	Paid in Full
8	Nicola Philips	210.00	0	Yes	Paid in Full
9	Mathew Porter	98.10	60	No	Overdue
10	Julie Marr	56.00	15	No	Still Owing
11	David Stevenson	23.90	0	Yes	Paid in Full
12	Shania Rowe	76.00	30	No	Overdue

..... End of Task 21

Sorting Data in a Spreadsheet

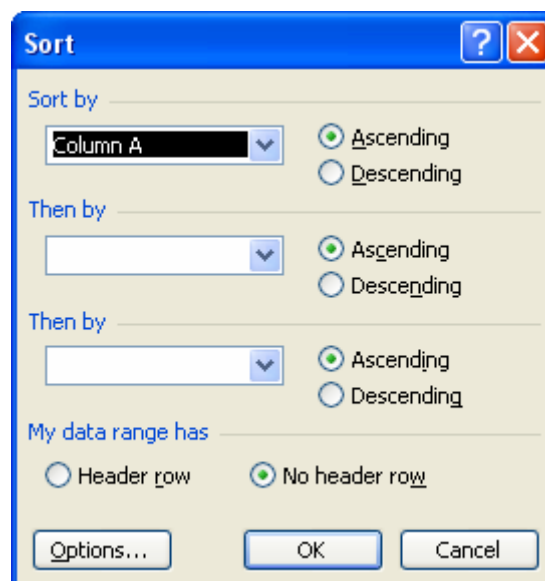
Frequently it is necessary to have data organised into either alphabetical order or numeric order. To simply sort data in a spreadsheet:

- Select all data that is to be moved when the data is sorted, **exclude** any headings from the sort range.
- Click on the Ascending or Descending sort tool on the toolbar:



Notice that the data is sorted by the first column selected. Often however, the data needs to be sorted by another column. To specify more exactly the sort order:

- Select all data that is to be moved when the data is sorted, **include** heading rows in the range.
- Select Data | Sort from the menu
- The following dialog box appears:



- Choose the field that the data is to be sorted on in the Sort by drop down list box.
- Choose either Ascending or Descending
- If there is second or third column to sort by, choose these from the Then by drop-down lists.
- Click on OK.



Task 22

WellJoined Steel Fabrication has a large spreadsheet showing all employee details. To make the sheet easier to reference you have been asked to sort the date. Open a new Workbook and type in the following Worksheet. Save the Worksheet as TASK22 before sorting the data. The instructions for the sheet are as follows:

- Select the data from A3 to G12 and sort into Ascending order on Surname.
- Print the new sorted sheet on a **landscape page**. Use File | Page Setup to change the page to Landscape before printing.
- Re-sort the sheet into descending order on Date of Birth. Reprint the sheet in this order.

NOTE: If any of the sorts don't work use the undo key to reverse the process and try again.

	A	B	C	D	E	F	G
1	Employee Details						
2							
3	Surname	FirstNames	Address	Phone Number	DOB	Start Date	Department
4	Minogue	Andrew	10 High St Richmond	9823 8756	12/05/68	August 6, 1982	Accounts
5	Silvers	Mathew	456 Sydney Road Parkville	9721 9450	3/06/57	May 23, 1970	Welding
6	Matheson	Elana	23 Lawson St Hawthorn	9421 5747	5/07/63	April 15, 1983	Reception
7	Adams	Robert	101 Clarke St Dennison	9399 8218	23/09/76	June 23, 1977	Accounts
8	Billings	William	20 Marshall St Heidelberg	9821 2119	15/04/70	June 8, 1994	Publicity
9	Muszkita	Spiros	3 Mark Rd Ivanhoe	9753 2211	14/10/51	October 4, 1989	Welding
10	Heinze	Kevin	12 Myrtle St Collingwood	9594 9093	23/08/71	May 23, 1997	Sales
11	Singh	Martavi	67 Dennison St Hawthorn	9655 3092	28/03/64	June 15, 1998	Sales
12	West	Noel	90 Railway Rd Charlton	9893 8822	8/07/55	October 19, 1996	Reception

..... End of Task 22



Task 23

The local swimming club requires a sorted worksheet for their swimming meet. Open a new Workbook in Excel and type in the sheet below. The instructions for the sheet are as follows:

- The heading uses 14 point Arial bold
- The subheadings use 12 point Arial
- Enter the data as shown and print a copy of the worksheet
- Sort the data so that the data shows the order in which the competitors finished the race.
- Print a second copy of the worksheet
- Save the file calling it TASK23

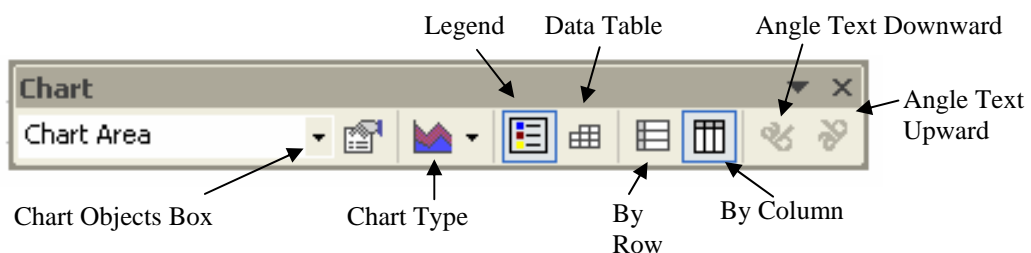
	A	B	C	D	E
1	200 m Mens Freestyle				
2	FINAL				
3					
4	Lane	Competitor		Country	Time
5	1	Marthe	Hans	Netherlands	2:21
6	2	Thompson	Jerry	USA	2:32
7	3	Flynn	Kevin	United Kingdom	2:15
8	4	Donald	Patrick	Australia	2:12
9	5	Myers	David	Poland	2:45
10	6	Lawson	Michael	USA	2:17
11	7	Tolstoy	Alex	Russia	2:31
12	8	Anatoly	Frederick	Croatia	2:54

..... *End of Task 23*

Graphing In Excel

Excel allows charts to be embedded on an existing sheet, with the data that is being graphed, or to be placed on a separate chart sheet. Using the Chart Wizard this choice is made as the chart is created.

To aid in the production of graphs in Excel it is desirable to have the Chart toolbar displayed. To bring up an additional toolbar, move the mouse up to the existing toolbars and then press the Right Mouse Button. A list of available toolbars appears - choose Chart. Position the toolbar by holding the left mouse button down on the blue caption on the top of the toolbar while dragging the toolbar to its new location. The chart toolbar has the following tools:



Using the Chart Wizard.

The Chart Wizard is a simple way to build a chart in Excel. Before a chart can be made however, the data to be graphed must be entered into a worksheet. Once the data is on the sheet, **select the cells to graph**, including labels if required. To start the Chart Wizard, click on the appropriate tool on the toolbar:

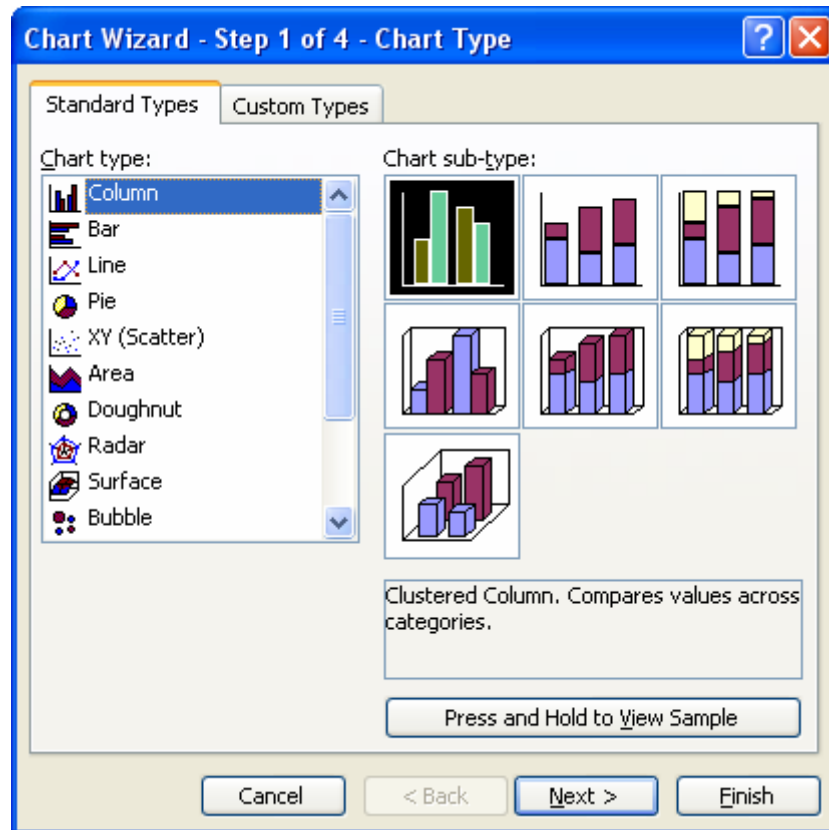


The Chart Wizard will begin. There are four steps to creating a chart in Excel:

1. Select the type of graph required
2. Check that the data selected is correct
3. Add details to the following sections of the graph:
 - Titles
 - Axes
 - Gridlines
 - Legends
 - Data Labels
 - Data Table
4. Decide if the graph is to be embedded in the current sheet or placed on a new chart sheet.

Types of Graphs

Excel has two sets of graph types – standard and custom. When the wizard begins the following dialog box appears:

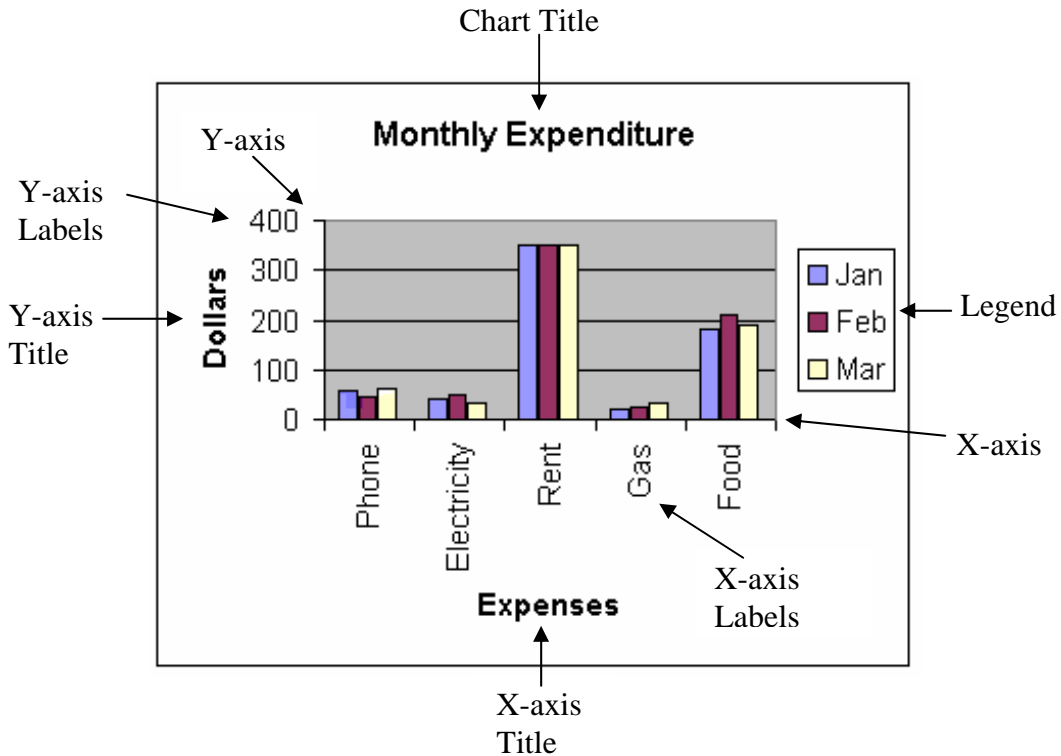


The standard graphs appear when the dialog box opens. To change to the custom graphs, click on the Custom Types tab at the top of the dialog box. The actual type of graph is selected in the left-hand list box. When a graph type is selected, a list of sub-types appears in the right hand side of the dialog box. Select the appropriate choice from this group and then click the Next> button to proceed to the next section of the Chart Wizard.

Selecting the Correct Data for the Graph

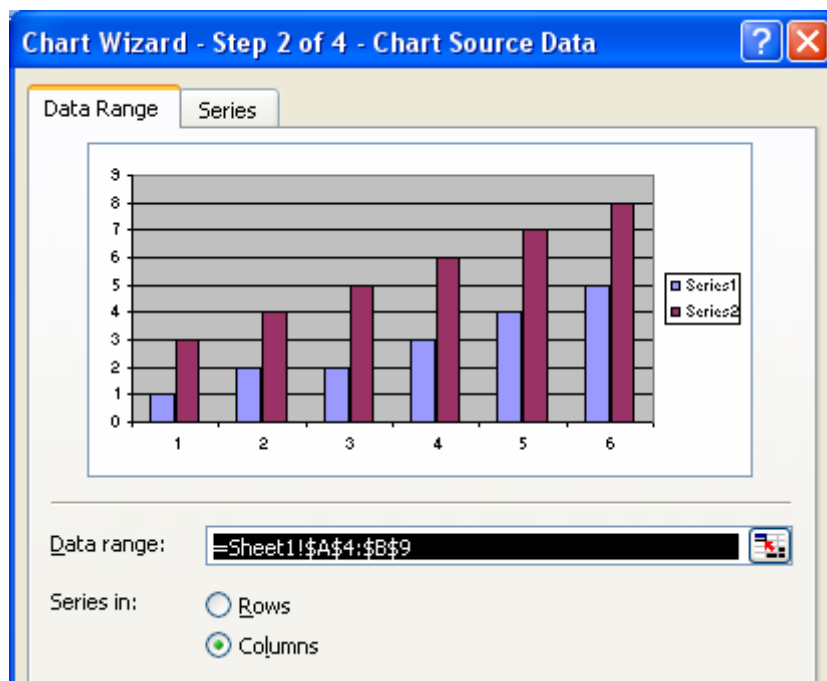
It is important that the range selected for a graph includes labels that are to form the X-axis titles as well as items in the legend. The following diagram shows an example of the sections of a graph:

- Chart Title
- X and Y-axis
- Legend
- X and Y-axis labels
- X and Y-axis titles



The three Titles shown on the graph can be typed into the Wizard. Excel automatically creates the Y-axis labels. The X-axis labels and legend items however must be on the Worksheet and part of the selected range for the graph.

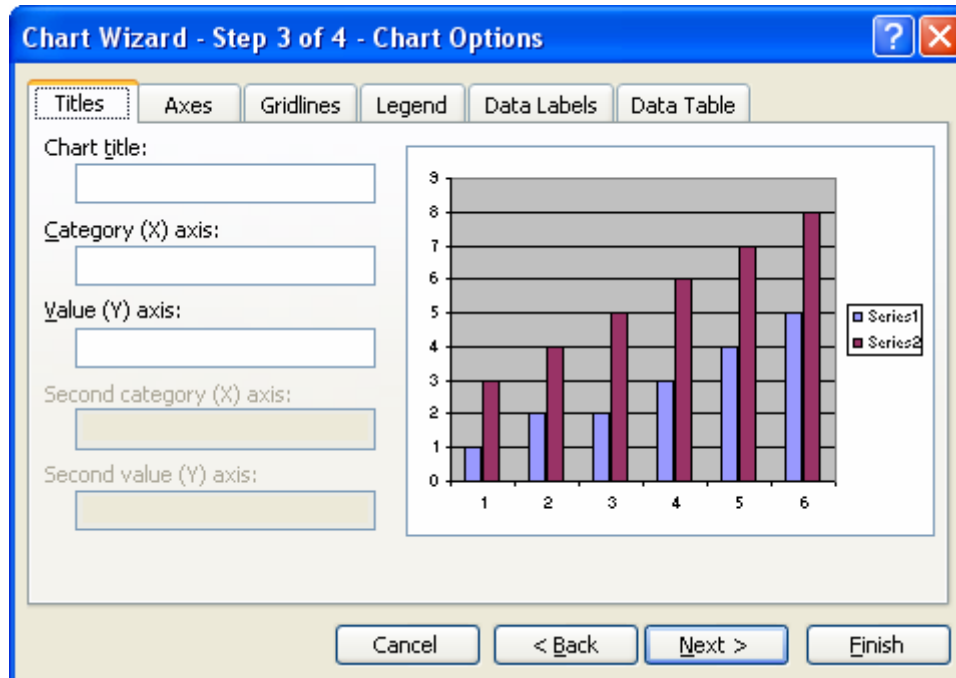
After the type of chart has been selected, press Next, to check the data range:



Check that the range shown is correct and determine if the data is to be graphed by row or column. When complete, press Next.

Adding Options to the Graph

The third step in the Chart Wizard adds detail to a graph. When step 3 opens, the following dialog box appears:

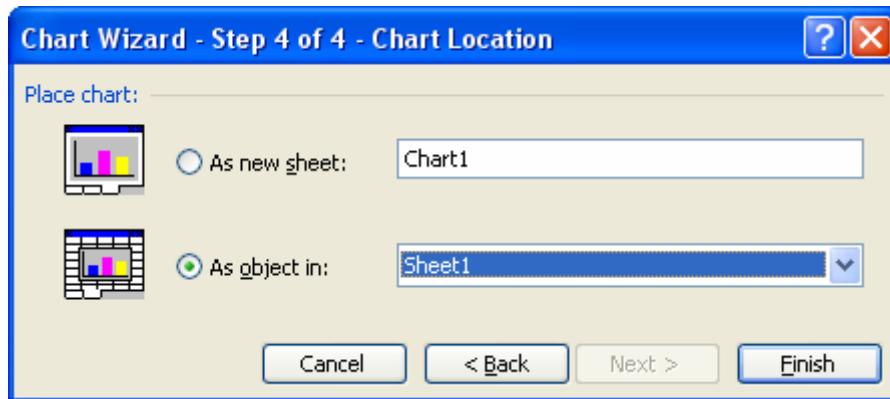


By clicking on the various tabs in this dialog box, each section of the graph can be customised as desired. The following gives a brief explanation of each tab:

- Titles** is used to add the main titles to the graph, as well as the X, Y and Z axes titles.
- Axes** is used to alter the appearance of the scales on the X and Y axes.
- Gridlines** allows the addition or removal of gridlines on the graph. The gridlines are often used to make the graph easier to follow.
- Legend** is used to remove or add a legend to the graph and also change the position of the legend in relation to the graph.
- Data Labels** appear mostly in pie charts where each section of the graph has a label. Using this tab it is possible to include a label on each piece of the pie as well as the relative percentage.
- Data Table** allows the addition of the worksheet data to the bottom of the graph.

The Chart Location

The fourth step in the Chart Wizard determines whether the chart is to be embedded in the Worksheet or placed on a separate Chart Sheet:



By default the chart will be placed on the Worksheet. To place the Chart on a new sheet, click on the As new sheet option. Press Finish when complete.

Editing the Graph

The chart toolbar can be used to change various options on the graph. Using the toolbar it is possible to change the type of graph drawn and select the various sections of the graph. It is also possible to alter the graph by **double clicking on the section of the graph to change**. Various dialog boxes will appear depending upon the object selected. Each dialog box has a number of tabs that can be used to alter sections of the graph.

Selecting Multiple Rows for Graphing Purposes

Often several columns of data need to be selected in order to produce the correct format on a graph. For example often the first column or two may contain the labels for the X-axis and the figures to be graphed may be several columns to the right of the labels. If all columns are selected the graph will be incorrect. To select multiple columns in Excel:

- Select the first range of cells
- Hold the CTRL key down and select the remaining ranges.

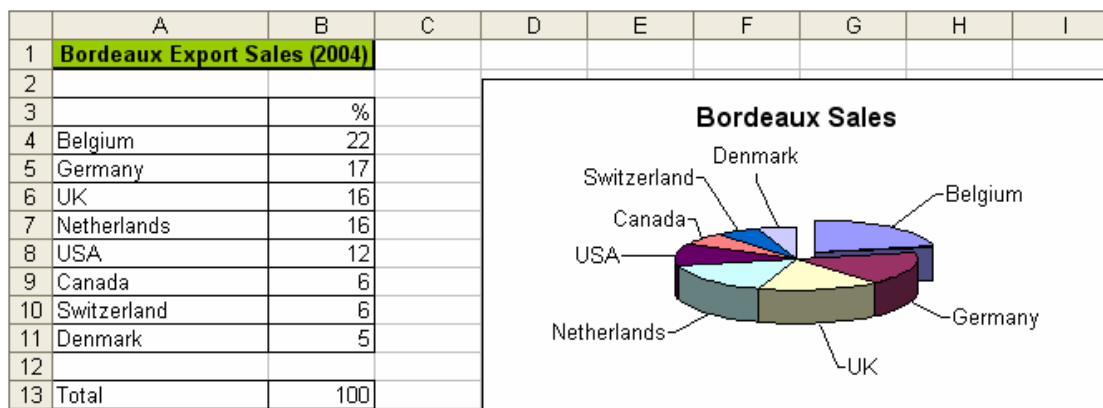


Task 24



Open a new worksheet in Excel and type in the sheet shown below. Using the data in the worksheet create the embedded 3D pie chart shown. Place your name on the sheet and save it as TASK24. Move the graph into the correct position and move the labels so they look similar to that shown. If the pie doesn't have the correct section exploded click the mouse several times on the pie until it forms a whole, then click until the Belgium section is the only section selected and drag it out.

Resave the sheet and print a copy of the sheet.

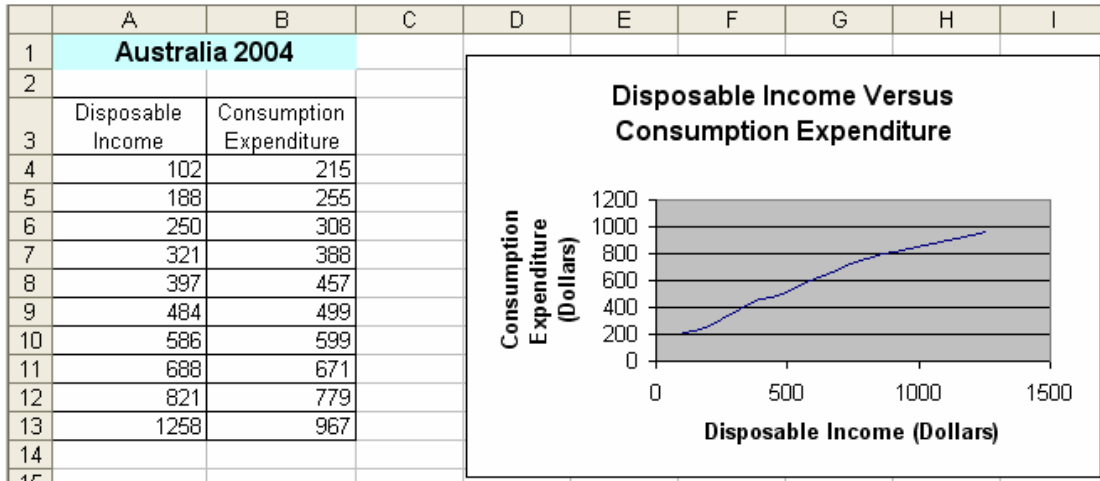


..... *End of Task 24*



Task 25

Open a new worksheet in Excel and type in the figures shown on the sheet below. Using these two sets of data produce the **XY (scatter) graph** shown embedded on the sheet. Place your name on the bottom of the sheet and save it as TASK25. Print a copy of the sheet as shown.



..... *End of Task 25*

Selecting a Non-Continuous Range for Graphing

Often the data to be used for a graph is not in a continuous range of cells. It is however, possible to select a number of sets of data for a graph by:

- Selecting the first range of cells for the graph
- Hold the CTRL key while selecting the next range
- Continue to hold the CTRL key and select the remaining ranges

Only those ranges selected will be graphed. This is a particularly useful selection technique when Total information needs to be graphed.

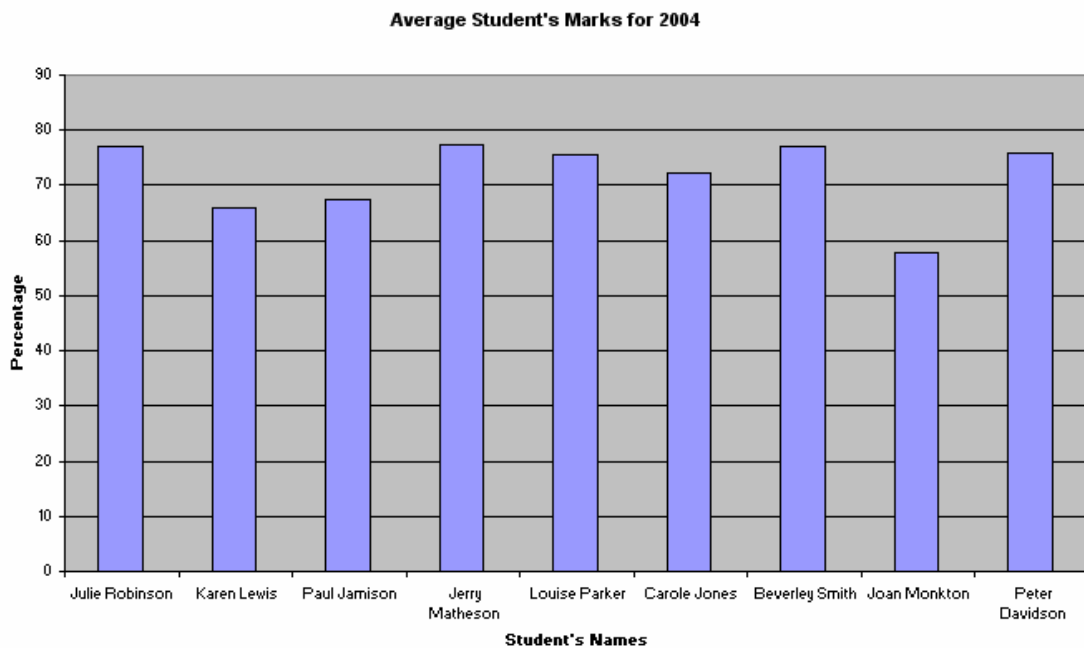


Task 26

To compare students for the year in a certain subject the Average mark for each student needs to be graphed. Open a new worksheet in Excel and type in the sheet shown below:

	A	B	C	D	E
1	Student Results				
2	2004				
3					
4	Student's Name	Test 1	Test 2	Test 3	Average
5	Julie Robinson	87	74	70	77
6	Karen Lewis	58	75	65	66
7	Paul Jamison	79	56	67	67
8	Jerry Matheson	91	68	73	77
9	Louise Parker	64	76	87	76
10	Carole Jones	73	79	65	72
11	Beverley Smith	88	81	62	77
12	Joan Monkton	45	52	76	58
13	Peter Davidson	81	73	74	76
14					
15	Highest Score	91	81	87	
16	Lowest Score	45	52	62	

Create a Column Graph showing the student's name and their average score. Place the graph on a new Chart sheet:



Absolute and Relative Cell Addressing

There are basically two forms of addressing that can be used in Excel – relative and absolute. Relative addressing is, as the name implies, an address relative to the current position. E.g. in order to give directions to a person who is lost, the directions are given in relation to their position now, such as turn left at the next intersection then first on the right. These directions would not work from any other position.

To give an absolute address it makes no difference where the person is currently located. The absolute address would be for example 2 High St, Golden Square. It is irrelevant where the person is currently located, the absolute address isn't going to change.

By default, Excel uses relative addressing in its formulae. For example take the following worksheet that subtracts the figures in column B from those in column A:

	A	B	C	D
1			Answer	Formula in
2				Column C
3	23	15	8	=A3-B3
4	45	21	24	=A4-B4
5	13	4	9	=A5-B5
6	67	51	16	=A6-B6

The formulae for the sheet are shown in column D. When the first formula is built in C3 Excel builds the formula =A3-B3. In reality however, what Excel records is that the figure in the column one position to the left in the same row, is to be subtracted from the figure two columns to the left in the same row. In other words the formula is not about cell addresses but relative movement from the answer cell. When the formula is copied down the column, Excel uses the same relative movements to construct the new formulae and thus changes the formulae for each cell as shown.

Sometimes however, this automatic changing of formulae can result in the wrong formulae being copied down a sheet. Take the following example sheet:

	A	B	C	D
1				
2				
3	Rate of Pay	\$6.50		
4				
5	Employee	Hours	Pay	Formula in C
6	Fred Smith	35	\$227.50	=B3*B6
7	John Jones	40	\$0.00	=B4*B7
8	Paul Grahame	28	#VALUE!	=B5*B8

The formula placed in C6 is correct =B3*B6 (rate of pay times hours worked). When the formula is copied however, Excel assumes these to be relative addresses and upgrades the formula accordingly. Thus the next formula is multiplying an empty cell by 40 hours and gets an answer of 0. The third formula is multiplying the label 'Hours' by 28 hours and is totally confused and gives an error message. To stop this confusion the cell containing the pay rate B3 needs to be addressed absolutely, so that no matter where the formula is copied to, B3 will remain the same. To make all or part of a cell address absolute the F4 key is used. Using F4 the formulae in the cells become:

	A	B	C	D
1				
2				
3	Rate of Pay	\$6.50		
4				
5	Employee	Hours	Pay	Formula in C
6	Fred Smith	35	\$227.50	=B\$3*B6
7	John Jones	40	\$260.00	=B\$3*B7
8	Paul Grahame	28	\$182.00	=B\$3*B8

Notice that the B3 address is now surrounded by \$ signs - this is the key that indicates to Excel that this is an absolute and not a relative formula. Now when the formula is copied, the B6 that is relative is changed to B7 for the next formula, but the B3 that is absolute remains the same.

Using the F4 Key

The F4 key changes a relative cell address to an absolute one. There are however, three different types of absolute address available in Excel:

- Both the column and the row address can be kept absolute e.g. \$B\$3 - neither will alter when the formula is copied
- Only the row address is absolute and the column is relative e.g. B\$3 - the column letter will change when the formula is copied, the row will stay the same e.g. C\$3. D\$3 etc
- Only the column address is absolute and the row is relative e.g. \$B3 - the row number will change when the formula is copied but the column letter will stay the same e.g. \$B4, \$B5, \$B6 etc

These different absolute addresses are all available using the F4 key, as the formula is built. When the cell that is to become absolute is clicked on with the mouse, follow the click with a press of the F4 key. Each successive press of the F4 key will change the type of absolute address that is generated. The type of absolute address is in the same order as the points above. The fourth hit of the F4 key will return the address to relative.



Task 27

Bluey's Pizza want a sheet where they can quickly enter the hours each employee works and the sheet will calculate their wages. Open a new worksheet in Excel and enter the sheet shown below. The instructions for the worksheet are as follows:

- Use the =TODAY() function to enter today's date on the sheet. Format the cell to display the century in the date.
- Shade the main heading bright yellow and the subheadings a light lemon.
- Do not enter the figures for the wages, as it requires an absolute formula. The formula required is:

$$= \text{Ordinary Hours} * \text{Pay Rate} + \text{Overtime Hours} * \text{Pay Rate} * 1.5$$

The address of the figure holding the Pay Rate must be made absolute before the formula is copied down the column.

Place your name on the bottom of the sheet and save it as TASK27. Print a copy of the sheet as shown and a second copy with the formulae displayed.

	A	B	C	D	E
1	Pay Period Ending 16th February 2004				
2					
3				Today's Date	6/11/2004
4					
5	Hourly Rate of Pay:				\$25.30
6					
7					
8	Employee's Name		Ordinary Hours	Overtime Hours	Wages
9	Minogue	Andrew	30		\$759.00
10	Silvers	Mathew	35	4	\$1,037.30
11	Matheson	Elana	27		\$683.10
12	Adams	Robert	35	3	\$999.35
13	Billings	William	34		\$860.20
14	Muszkita	Spiros	32		\$809.60
15	Heinze	Kevin	35	2	\$961.40
16	Singh	Martavi	31		\$784.30
17	West	Noel	20		\$506.00

Use a function to get today's date

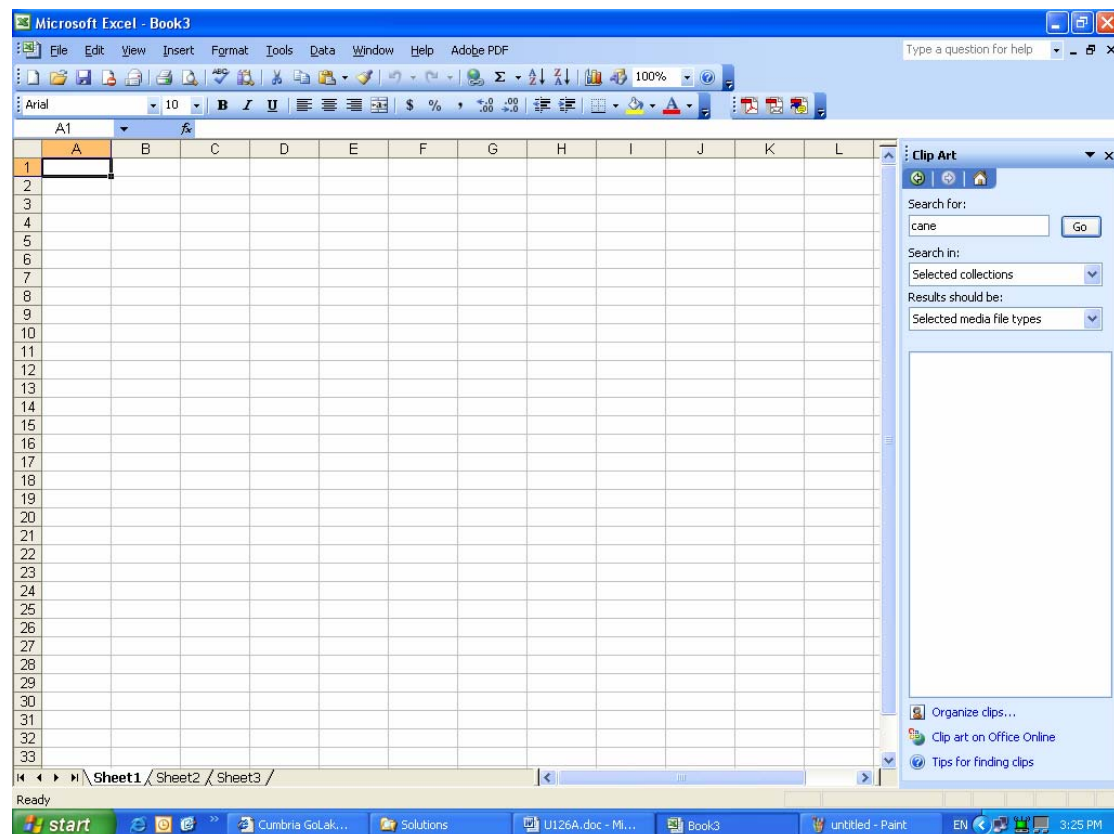
Use an absolute formula in this column

Adding a Graphic to a Spreadsheet

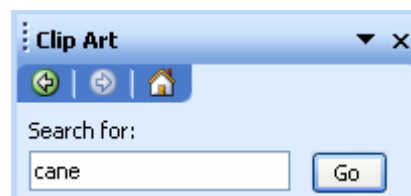
To add a graphic to a spreadsheet, click the cursor in a cell (the location of the cell is not important as the graphic can be moved later):

- Click on Insert from the menu
- Choose Picture
- Choose Clip Art...

The Clip Art Task Pane appears on the right of the screen:



Enter the topic for the graphic into the Search For text box and click the Go button:



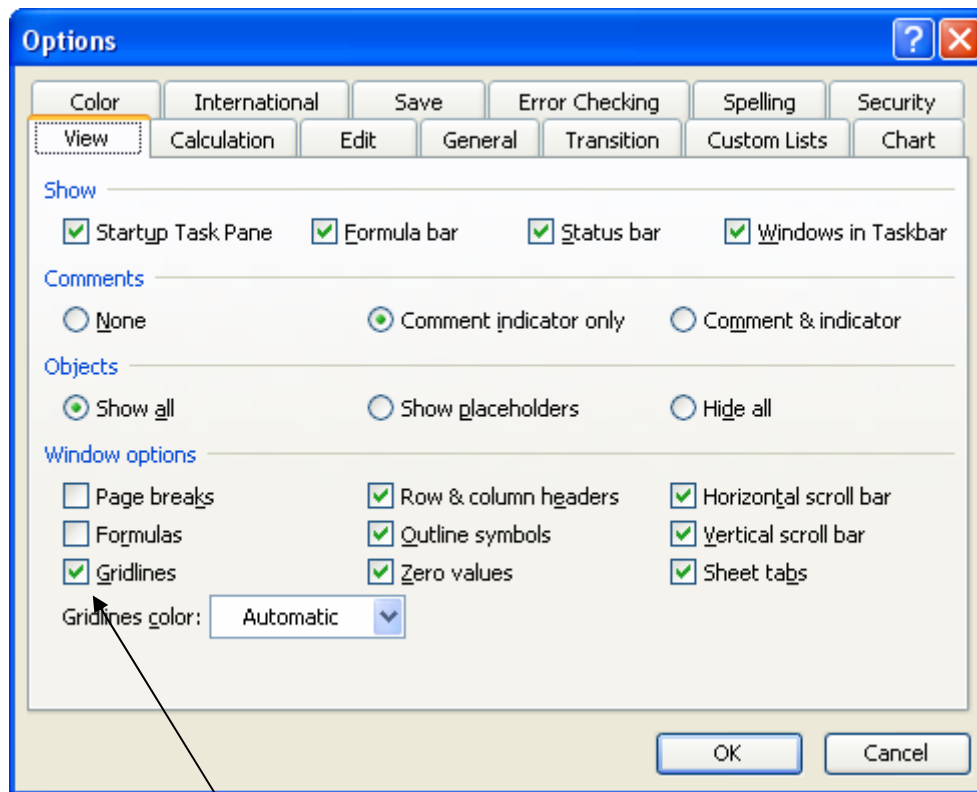
The images that match the Search criteria will appear.

Choose the required image and click on the picture to insert the picture into the Worksheet. When the picture loads it can be sized by using the handles on the corners and moved using the mouse.

Turning off the Gridlines on a Spreadsheet

Often, to aid in designing a sheet, the gridlines are better made invisible. To remove the gridlines from a sheet:

- Choose Tools from the menu
- Select Options
- Check that the View tab is opened:



- Take the tick off Gridlines in the dialog box displayed, by clicking on the check box.
- Click on OK

To turn them on again repeat the procedure above placing the tick on Gridlines.



Task 28

Open a new workbook in Excel and design the following order form on a new sheet. Print the empty order form when finished. Use any suitable graphic from the Clipart collection. Call the file TASK28.

LIGHTHOUSE PUBLISHING

**PO Box 240
Brisbane 7001**

**Phone (07) 9872 3212
Fax (07) 9872 3222**



Date

To:

Quantity	Description	Amount
Total \$		

Delivery Instructions:

Authorised

..... *End of Task 28*

Grouping Worksheets Together

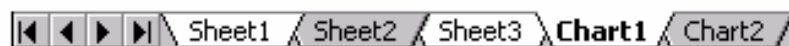
To make data entry easier over a number of similar worksheets, it is possible to group the sheets together for the common data and ungroup them to add the unique data for each sheet. To group sheets together when they are in a continuous set:

- Select the first sheet in the Group
- Hold the SHIFT key down and select the last sheet in the range

The sheet name tab will turn white to show they are grouped. If the sheets to group are not in a continuous range:

- Select the first sheet in the Group
- Hold the CTRL key down while selecting the remaining sheets

Again the grouped sheets will have their sheet name tab turn white:



To ungroup the sheets click in one of the sheet name tabs.

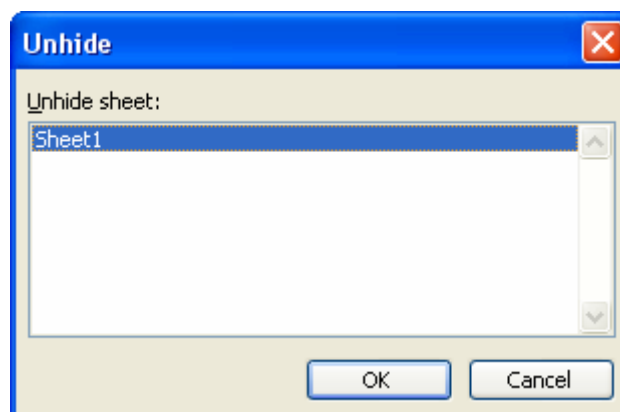
Hiding a Sheet

When a number of sheets are in a group it is often desirable to hide one of the sheets either as a security measure or for printing purposes. To hide a sheet in a workbook:

- Open the worksheet to hide
- Select **Format|Sheet**
- Choose **Hide**

To unhide the sheet:

- Select **Format|Sheet|Unhide** the following dialog box appears:



- Select the sheet to unhide (only one can be chosen at a time)

- Click on OK

Protecting an Entire Workbook

Once a workbook is completed, to secure the workbook from inexperienced users or from accidental alteration the entire workbook can be protected. Once protected the user cannot:

- Move or delete a worksheet
- Hide a worksheet or unhide a previously hidden worksheet
- Rename a worksheet

To protect the workbook:

- Open the workbook to protect
- Click on **Tools|Protection**
- Select **Protect Workbook**



Task 29

Open a new Workbook in Excel and make sure there are at least five Worksheets in the Workbook. If there are less than five sheets in the Workbook add more Worksheets using the command **Insert|Worksheet**. Name the sheets Jan, Feb, Mar, Apr, Summary. Type in the shell for the first four sheets shown below, using **Grouping** to cut down the data entry:

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4		
5		
6	Date	Takings
7		
8		
9		
10		
11		
12		
13		
14		
15		

Click through the sheets and each of the first four sheets will have this shell on it. Ungroup the sheets by double clicking on any of the sheets in the group. Change the month as shown and add the individual data for each sheet:

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4	January's Figures	
5		
6	Date	Takings
7	1/01/2004	1,540
8	2/01/2004	1,345
9	3/01/2004	1,289
10	4/01/2004	1,342
11	5/01/2004	1,540
12	6/01/2004	1,890
13	7/01/2004	1,290
14	8/01/2004	1,652
15	9/01/2004	1,490
16		13,378

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4	February's Figures	
5		
6	Date	Takings
7	1/02/2004	1,576
8	2/02/2004	1,674
9	3/02/2004	1,342
10	4/02/2004	1,532
11	5/02/2004	1,456
12	6/02/2004	1,765
13	7/02/2004	1,890
14	8/02/2004	1,578
15	9/02/2004	1,680
16		14,493

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4	March's Figures	
5		
6	Date	Takings
7	1/03/2004	2,130
8	2/03/2004	1,789
9	3/03/2004	1,890
10	4/03/2004	1,456
11	5/03/2004	1,754
12	6/03/2004	1,356
13	7/03/2004	1,456
14	8/03/2004	1,754
15	9/03/2004	1,645
16		15,230

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4	April's Takings	
5		
6	Date	Takings
7	1/04/2004	1,245
8	2/04/2004	1,367
9	3/04/2004	1,478
10	4/04/2004	1,579
11	5/04/2004	1,690
12	6/04/2004	1,780
13	7/04/2004	1,490
14	8/04/2004	1,645
15	9/04/2004	1,860
16		14,134

Create the following Summary sheet on the fifth sheet in the Workbook. The takings use a formula. For each total click in the total cell, press the = key and then click back to the total on the relevant sheet and then press Enter:

	A	B
1	Miller Street Take Away	
2	Takings Sheet	
3		
4	Summary Sheet	
5		
6	Month	Takings
7	January	13378
8	February	14493
9	March	15230
10	April	14134

Hide the Summary Sheet and then protect the workbook so no further alterations can be made to it. Save the Workbook as TASK29.

..... End of Task 29

Naming Cell Ranges

To make more sense out of formulae in worksheets, it is a good idea to give a range of cells a meaningful name. To name a range of cells:

- Select the cells to name
- Click in the range name box which normally displays the address of each cell:



- Type in the name of the Range
- Press the Enter key to fix the range name

Enter the range name here

Naming Worksheets

As well as naming ranges for readability in formulae, it is also good technique to name each worksheet with a meaningful name. To name a sheet:

- Double click on the sheet tab at the bottom of the workbook:



- The tab will turn black
- Enter the new name for the sheet and press Enter.

VLOOKUP in Excel

Function	Purpose
VLOOKUP	Searches for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify in the table

The VLOOKUP function is used for looking up a table and returning a value determined by the search of the lookup table. In order to make VLOOKUP work correctly, two conditions must be satisfied:

1. The value that is being looked up must be in the leftmost column of the table (that is a range of cells on a worksheet that is acting as the lookup table)
2. The lookup table must be sorted in ascending order.

The syntax for the command is as follows:

=VLOOKUP(what you are looking for, rangename, column to retrieve from)

For example:

Given the following Lookup table called Rates, with the highlighted range called Values, the following VLOOKUP command could be used to find Mary in this table:

	A	B	C
1			
2			
3			
4	Employee	PayRate	
5	David	19.50	
6	Fred	15.80	
7	George	27.40	
8	Mary	27.00	
9			
10			
11			
12			

=VLOOKUP("Mary",Rates!Values,2)

The command would look for the name "Mary" in the left most column of the range called Values on the sheet called Rates and return the value in the same row as Mary but from column 2, which is \$27.00.



Task 30



You are employed at Vernon's Supermarket, in their payroll area. To make the calculation of part-time employee's wages easier, you have decided to enter each employee's name and pay rate into a lookup table. To calculate the wages will then only require the entry of the Person's name and hours worked.

Open a new Workbook in Excel. Type the following into sheet1:

	A	B	C
1	Vernon's Supermarket		
2	Employee Time Sheet		
3			
4	Pay Rate		
5			
6	Employee's Name		
7	Hours Worked		
8			
9	Wages		

Format to Currency (pointing to cell B4)

Format to Currency (pointing to cell B9)

Move to sheet2 and create the following Lookup table:

	A	B
1	Employee	PayRate
2	Bland,David	19.50
3	Rodder, Dennis	18.76
4	James, Fred	15.80
5	Michael, George	27.40
6	Peters, Mary	27.00
7	Harvey, Wilma	21.70
8	Smith, Joanne	22.30

The following instructions are needed to complete the task:

- Name Sheet2 Rates
- Select the range A2 to B8 on Sheet2 and sort the data in ascending order
- Name the same range Pay and remember to press Enter
- In B4 on Sheet1 enter the following formula:

=VLOOKUP(B6,Pay,2)

- In B9 on Sheet1 enter the following formula to calculate the Wages:

=B7*B4

Try out the sheet by entering one of the names in the Lookup table into B6 on Sheet1. Make sure the name is typed exactly as it appears on Sheet2. Enter the number of hours worked and the wages for the employee should appear. Change the name and hours to check that the sheet is working correctly.

Printing Worksheets

There are a number of alternative choices when printing from a workbook. These include:

- Printing the current worksheet
- Printing all worksheets in a workbook
- Printing a set Print Area only
- Printing a Selected Area from a Worksheet

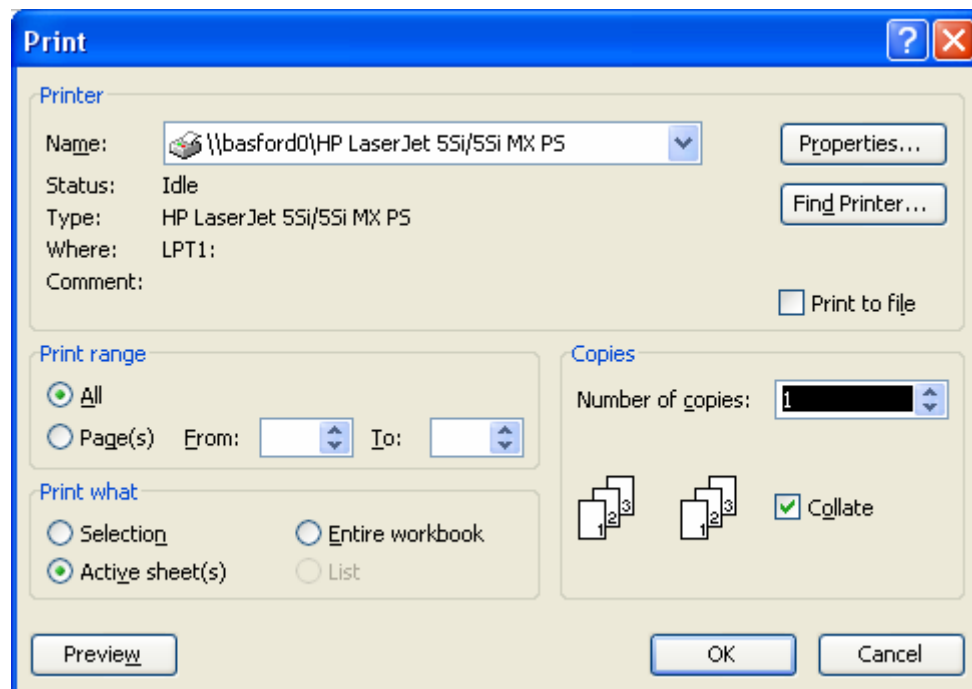
Printing the Current Worksheet or all Worksheets

To print the current worksheet is very easy, just open the sheet and click on the Print button from the toolbar:



To print all worksheets in a workbook:

- Choose File|Print from the menu
- The following dialog box appears:



- Choose Entire Workbook from the Print what area and click on OK

To print a selected area:

- Open the worksheet where the area is located
- Select the portion of the sheet to print
- Choose File|Print from the menu
- Choose Selection from the Print what area
- Click on OK

Setting Up a Print Area

To create a permanent print area (that is one that will print whenever the sheet is printed without reselecting it):

- Open the Worksheet
- Select the area to permanently print
- Choose File|Print Area|Set Print Area from the menu

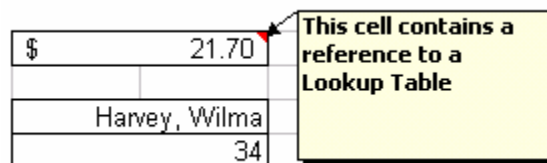
The Print Area will appear with a dashed line around it. When it is reselected its name will appear as Print_Area in the range name box.

To remove the print area choose File|Print Area|Clear Print Area from the menu.

Annotating Cells

To add a comment to a cell:

- Click in the cell where the comment is required
- Press SHIFT F2
- A comment box appears, with a tiny red triangle appearing at the top right hand corner of the cell:



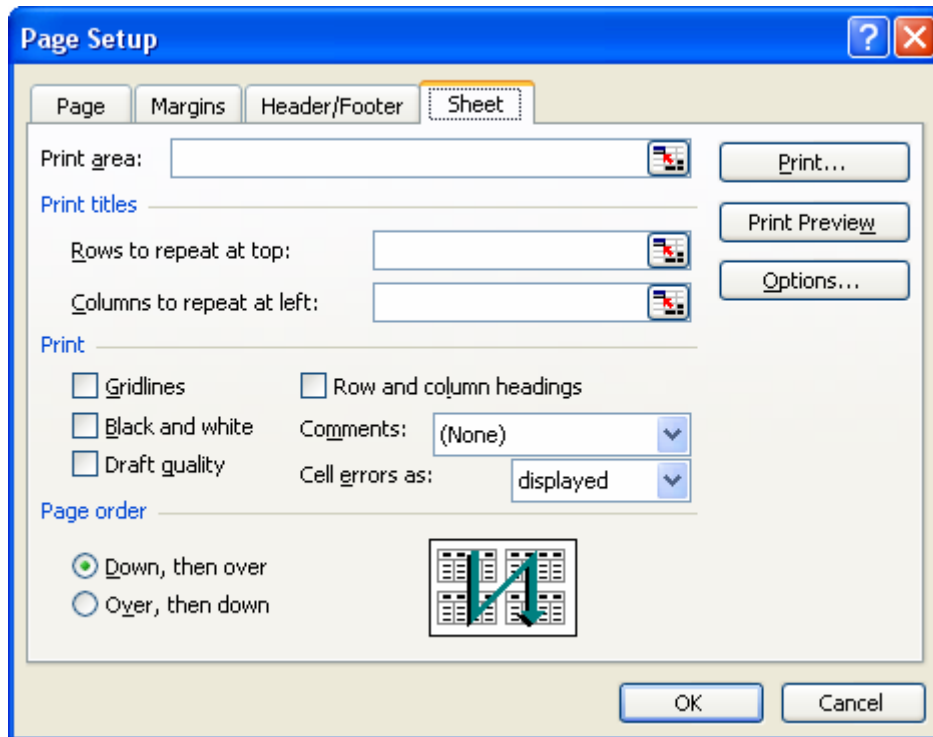
- Enter the required comment.

To remove the comment from a cell press the Right Mouse button over the cell and choose Delete Comment.

Printing Comments for the Sheet

To print the comments for each cell where they are located on the sheet:

- Choose File|Page Setup
- Click on the Sheet tab to display the following dialog box:

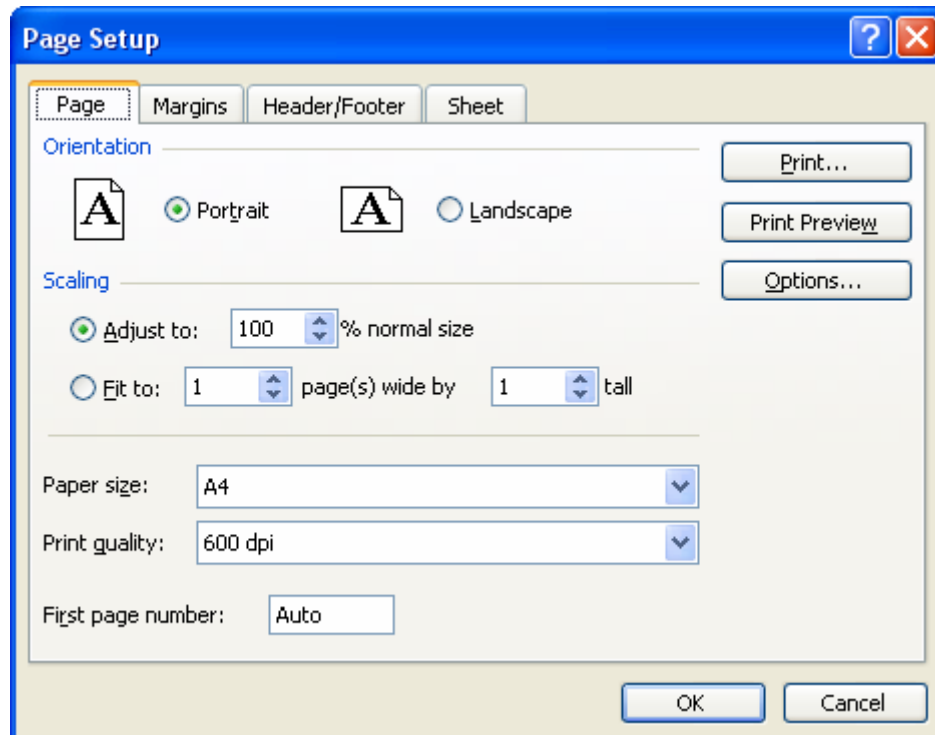


- Use the drop-down list box beside Comments to choose As displayed on sheet
- Print as required.

Making the Worksheet fit onto a Single Page

While large sheets need to be printed over a number of pages, some spreadsheets are best printed on a single sheet. To force Excel to size the sheet to the page when printing:

- Choose File|Page Setup from the menu
- The following dialog box will appear:



- Click on the option button beside Fit to 1 page wide by 1 page tall
- Click the Print button

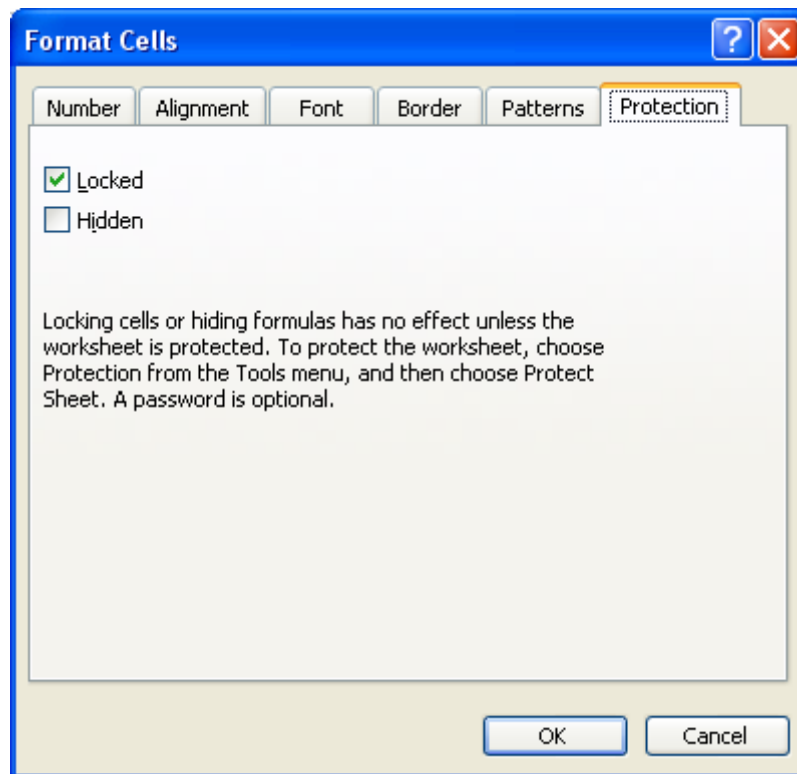
Security Measures in Excel

There are a number of different ways in which a worksheet that is being shared by a number of users can be protected from accidental change. The following section outlines ways in which the Workbook and its corresponding sections can be secured from unnecessary erasure or change.

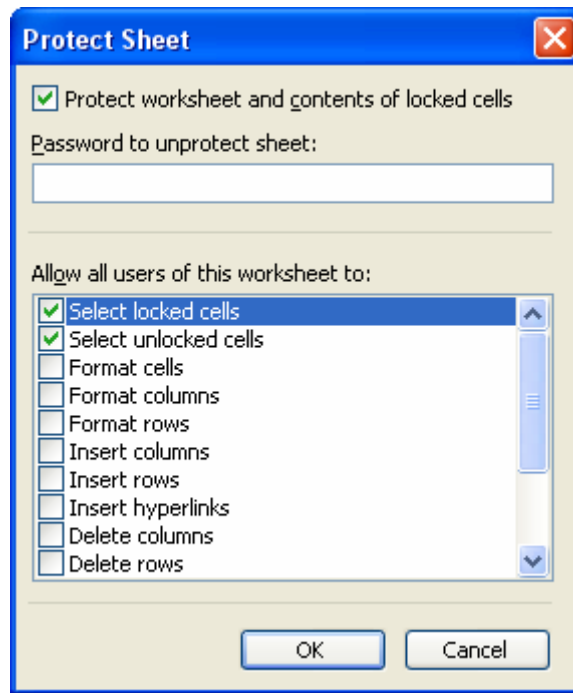
Protecting a Cell or Range of Cells

To safeguard against the accidental or unauthorised alteration of individual cells or a range of cells on a sheet:

- Select the cells that are **not** to be protected
- Select **Format|Cells**
- Select the **Protection tab** and the following dialog box appear:



- Turn off the **Locked** feature
- Protect the whole sheet by selecting **Tools|Protection|Protect Sheet**. The following box appears:



Enter a password in the Password text box and click on OK. Re-enter the password to confirm the spelling of the password. The sheet cannot now be changed until the password is removed using **Tools|Protection|Unprotect Sheet** and re-entering the password.

By protecting the cells as described above, the only cells that can be changed are those that have been unlocked, the other cells are protected.



Task 31

You have been employed by the Pinnacle Tour Company to calculate their first years profit figures. Once the sheet is complete they intend to use the shell for next half-year figures.

Type in the sheet below. Use formulae for all calculations. Format the sheet as shown.

Unlock the cells in the range A2, B5 to G6 and B10 to G13 so that new data can be added to sheet, protect the rest of the sheet. Create a print area from A1 to G16 and place a comment in B16 indicating how the Profit has been calculated. Save the sheet as TASK31 and print.

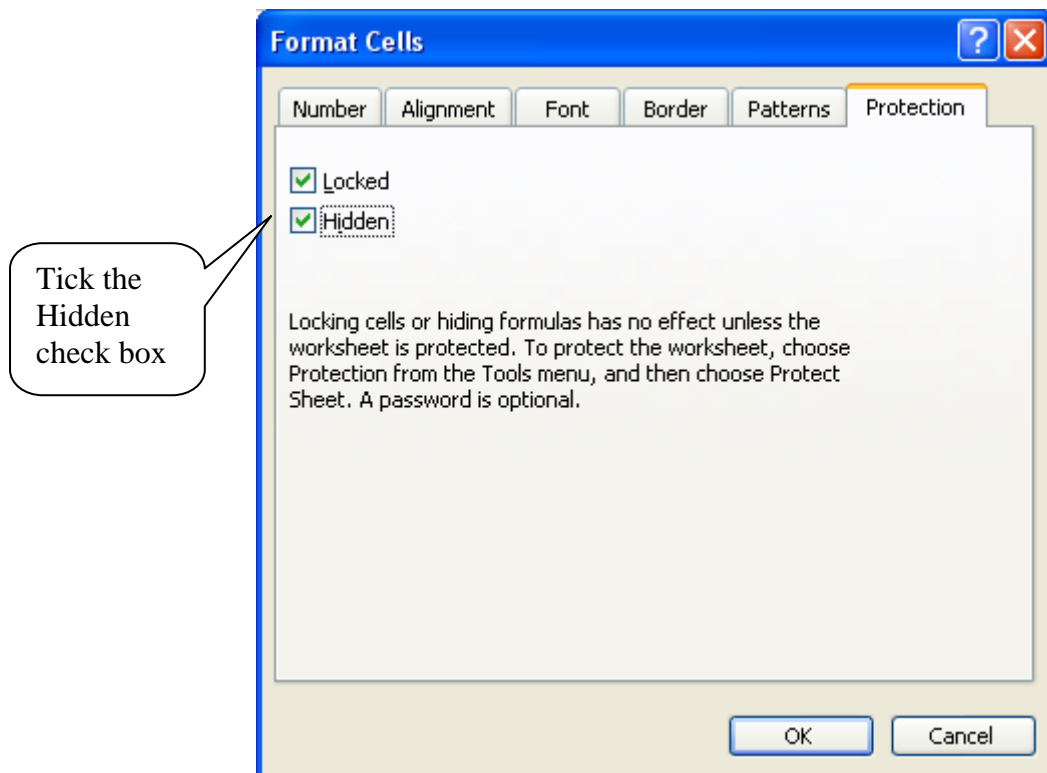
	A	B	C	D	E	F	G
1	Pinnacle Tours						
2	Half Yearly Figures						
3							
4	Income	Jan	Feb	Mar	Apr	May	Jun
5	Tours	31,000	32,000	29,800	30,000	29,800	25,000
6	Souvenirs	2,500	3,040	2,300	3,200	2,300	1,200
7		33,500	35,040	32,100	33,200	32,100	26,200
8							
9	Expenses						
10	Wages	12,500	15,300	13,000	12,500	10,900	9,800
11	Rent	2,000	2,000	2,000	2,000	2,000	2,000
12	Phone	3,500	4,200	2,100	2,300	1,890	1,580
13	Utilities	1,000	980	1,200	1,100	1,200	870
14		19,000	22,480	18,300	17,900	15,990	14,250
15							
16	Profit	14,500	12,560	13,800	15,300	16,110	11,950

..... *End of Task 31*

Hiding Formulae on a Sheet

Programming in any language is a tedious and time-consuming process. In order to ensure that the software developed by the programmer isn't easily copied, the more data that can be hidden from the user the better. To hide formulae so that users cannot view and copy them:

- Select the range of cells where the formulae are located
- Select **Format|Cells**
- Select the **Protection tab**
- Select the check box labeled **Hidden**



- Click on **OK**
- Protect the sheet using the **Tools|Protection|Protect Sheet**



Task 32

You have been employed to generate a commission sheet for Manster's Department store. Open a new worksheet in Excel and type in the sheet shown below. Enter the formulae for the sheet as shown:

- Enter today's date in B3 using =Today()
- The commission for each sales person is 2% of their sales figure.

Resize the window as shown and protect this from change. Hide the formulae on the sheet so they are not visible in the formula bar.

	A	B	C	D
1	Sales Figures 2nd Quarter 2004			
2				
3	Date:	23/07/2004		
4				
5	Salesperson	Department	Sales Amount	Commission
6	Fred Jones	Electrical	19,765.00	395.30
7	Louise Miller	Manchester	23,901.00	478.02
8	Kathy Jenkins	Kitchen	4,523.00	90.46
9	Paul Parker	Men's Shoes	12,987.00	259.74
10	Harold Johnson	Women's Clothing	342,567.00	6,851.34
11	Milly Grahame	Electrical	23,890.00	477.80
12	David Smith	Men's Clothing	21,909.00	438.18

Open a second Workbook and resize this window so that both Workbooks are visible on the screen beside each other. Protect this window from resizing as well.

Demonstrate these features to your Supervisor.

..... *End of Task 32*