


CHAPTER 1: BASICS

1.1 Menu bar and tool bars

Observe the menu bar (File, Home, Insert, Page layout, References, Mailings, Review, and view). Each menu contains a list of commands and an icon of the command, corresponding to icons on the tool bars. Clicking on a command selects it. The tool bar contains the most frequently used commands.


CLICK ON ICONS ON THE MENU BAR AND OBSERVE THE VARIOUS SET OF COMMANDS IN THEIR TOOL BAR

1.2 Creating, saving and opening a document

1.2.1 Opening a new blank document: Locate a menu bar item named *File* left of the Home menu bar. . Click on this and then click **New**. Under templates, you see options you can use: to *create* a blank new document, work book or presentation. *Double click the blank document* under the **blank and recent** option to create a new document.

Activity 1.1

Now type the following text: **This is my first lesson in word-processing. I am enjoying it so much. My only problem is typing. I haven't learnt how to type so I type by pressing the keys one after the other.**

1.2.2 Saving: When a document is created it only exists in **memory**. To permanently save; Click the **File** button , and then click **Save As** a dialog box appears automatically when you click **Save As....** And for the *file name* type a name for the document. Then select a location or folder where you want to save your work. Use this process to save your work for the first time or save your existing document under a new name, use CTRL+S to update a file when changes are made thus the document will have its original name but revised content.

NB: It is useful to save your work frequently (may be every 5 or 10 minutes).

Activity 1.2

Save your work:

Click on the **File Button/ Save As.....** ; **Type** your name in the file name list box; click save or press Enter. Close your file;

An existing document is saved on the hard disk, on a CD, or on a pen drive. You need to bring the document into memory in order to view or edit it. Bringing a document to memory is called **opening a document**.

1.2.3 Opening an existing document: Click , and then click **Open**; In the **Look in** list, click the folder, drive, or Internet location that contains the file that you want to open. Double-click on the file name or click **Open** to open the file.

Activity 1.3

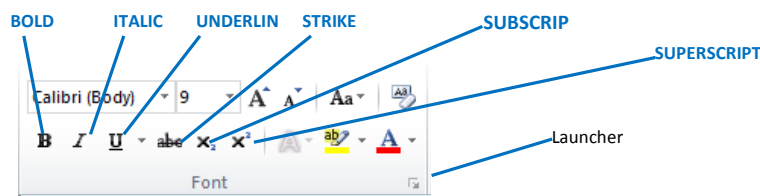
Now open the saved document

1.3 Character formatting

Character formatting enhances the appearance of texts. The most common types of character formatting involves the choice of font, font styles such as **bold**, *Italic*, **bold italic**, underline, ^{superscript}, _{subscript}, Text color, character spacing and text animation can also be chosen.

1.3.1 Fonts are the shapes of the characters.

Select the text you want modified and from the **Home tab**, choose the attribute you want from the **Font** group as shown in below.



1. Alternatively Click On the **Home** tab, click on the *Font Dialog Box Launcher*, Select the options that you want to apply to the default font, such as font style and font size. If you selected text in step 1, the properties of the selected text are set in the dialog box. Click the appropriate button(s) on the Font Dialog Box.

Font Sizes are given in points. There are 72 points in 1 inch (25.4mm), so as 12-point text like this is 1/6 of an inch (4.2mm)

Note: For formal work, the required font is usually Times New Roman, Size 12 Point

You can apply character formatting before or after you type the text. You can apply more than one format at any time. The format menu contains all the formatting choices available

Activity 1.4

Type: Certificate of achievement and select it. Click on the Font Dialog Box Launcher on the Home tab, the font dialogue box opens with the font tab activated. Click on the font: Garamond, Font style: Regular Size: 28, Select Font color: Red, Underlying style: Single Wavy, Underlying color: Yellow Effects check the shadow and the All caps check boxes. Click OK. Do you like your results?

CERTIFICATE OF ACHIEVEMENT

Some formatting shortcuts include **Ctrl+B** for bold, **Ctrl+I** for italic, and **Ctrl+U** for single underline.



1.4 Paragraph formatting


Grammatically, a paragraph is defined as a group of sentences about a single topic. However, in word processing a paragraph is any text followed by a hard return (Pressing ENTER). Paragraph formatting enables you to control the placement, shape and relationship between your paragraphs. The paragraph formatting features include alignment, indents, bulleted or numbered, line spacing, borders and shading applications.

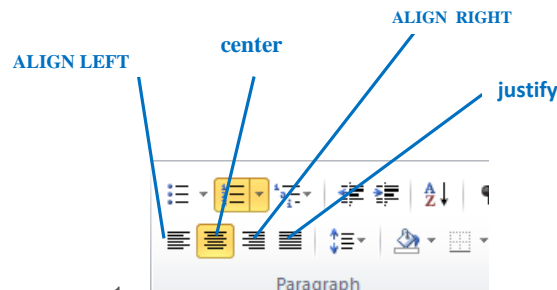
There are four 4 types of paragraph alignments *Left, Centered, Right and Justified*. Left alignment has an even left margin, but the right margin is ragged, or uneven. It is commonly used in narrow columns and on web pages. Right alignment has an even right margin and an uneven left margin. This type of alignment is awkward for most people to read, but can be used for special displays. Full justification gives even left and right margins. Both edges of the text are flushed at the margins. This type of alignment is easy to read and it gives the document a balanced appearance on the page.

Note: Justified alignment is strongly recommended for formal documents (Letters, Report, CV,etc)

1.4.1 Paragraph alignment

To adjust the alignment of a paragraph, click in the paragraph anywhere (you don't need to select the whole paragraph) and **ALIGN LEFT OR RIGHT**: Select the text you want to align and on the **Home tab**, in the paragraph group, click **Align Left**  or **Align Right** .

To center the text: Select the text you want to align and on the Home tab, in the paragraph group click center .



Activity 1.5

Type: This paragraph provides the text for an exercise on the setting of various types of paragraph alignment, namely left alignment, right alignment, justified alignment, and center alignment, it will also be used to analyze the effect of different indenting.

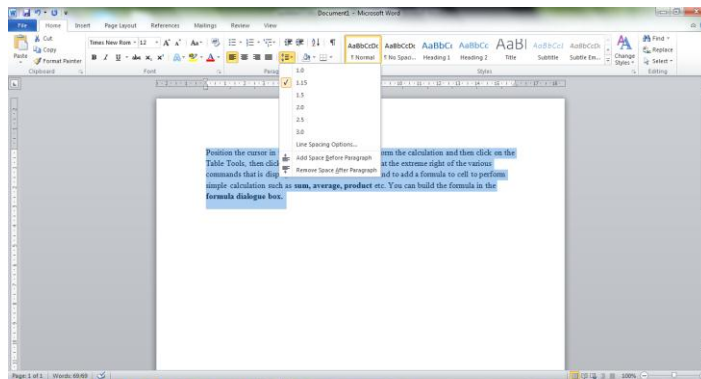
Click anywhere in the paragraph and observe the alignment buttons on the formatting toolbar. Click the Align Right button and observe the text. Click the Align Right button again to cancel the right alignment and return to the default alignment. Click each of the remaining alignment buttons and make observations.

1.4.2 Spacing

You can set the spacing between the lines within a paragraph. The default line spacing is **single (1.0)** but you can choose 1.5 lines, double (2.0) and so on. You might want to change line spacing when you want to make a document such as a contract easier to read.

To set the line spacing, position the cursor within the paragraph. If there are a number of paragraphs to have the same line spacing select all the paragraphs. To select the whole document press **CTRL+A**

Select Home > Paragraph > Line Spacing. A list of options appears as shown in figure below.



Select a line spacing option. Word applies the spacing you select to the highlighted text. Shortcut keys for setting line spacing are: **Ctrl+1 for single spacing**, **Ctrl+2 for double spacing**, and **Ctrl+5 for 1.5 line spacing**

Activity 1.6

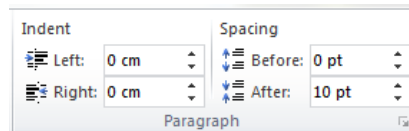
Set double line spacing for the text you typed.

Note: Remember to change your spacing before and after every paragraph

1.4.3 Indented text moves closer to the center of the page. You can indent text from either the left or right sides of the page or both. Indents are used to make reading text easier to number or section paragraphs and to make text stand out more.

By default, spacing is increased slightly following the paragraphs.

1. Select the paragraphs before or after which you want to change the spacing.
2. On the page layout tab, in the paragraph group, click an arrow next to spacing before or spacing after and enter the amount of space that you want

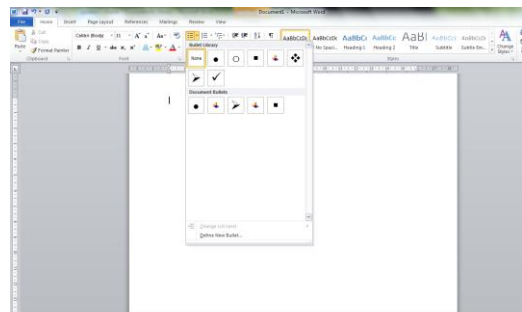


1.4.4 Bullets and numbers

Bullets are used for highlighting a list of single lines or paragraphs. **Numbers** are used to create a series of procedural steps or to prioritize a series of items.

To create a bulleted or numbered list:

Select the items you want to add bullets or numbers to, On the Home Tab in the paragraph group, Select Bullets or numbering. You can find different bullet styles and numbering formats by clicking the arrow next to **Bullets** or **Numbering** on the **Home** tab, in the **Paragraph** group. An



Activity 1.7

Type the following text pressing enter after each line:

Paragraph formatting involves:

Indents

Bullets and Numbers

Control of the flow of text

Lines and Fills

Select the items you want in the bulleted list, choose format Bullets and Numbering, click and select a bullet of your choice, customize you bulleted list, click OK

1.4.5 Borders can be applied to individual lines or selected text, or an entire paragraph. You can add a border to any or all sides of each page in a document, to pages in a section, to the first page only, or to all pages except the first. You can add page borders in many line styles and colors, as well as a variety of graphical borders.

Activity 1.8

*Apply border to the paragraph you have typed: Click in the paragraph, On the **Page Layout** tab, in the **Page Background** group, click **Page Borders**. The Borders and Shading dialog box opens; click on the Borders Tab, choose the setting for the border, select a line style, color and width if you want something different from the default setting. Preview on the right hand side allows you to add or remove borders by clicking on the side you require a border.*

Activity 1.9

Apply shading to your paragraph. Click on the shadings tab if the Borders and shading dialogue box is already opened; under fill, click on a color you like; you can select a pattern style if default setting is not suitable. Follow the appearance of the paragraph in the preview box and when you are satisfied, Click OK

1.4.6 Tabs allow you to align text at a pre-set location other than at the margin. It is important that you use tabs, not the space bar, to lock text in at a particular point across the page. Otherwise you will find that when the document is printed the text on the successive lines may not be aligned at the same point, depending on the type of printer you use. Tabs are already set by default at every 0.5'' or 1.27 cm from the left. You can change the default setting to reduce the default tab stops or the tap stop position.

Do not try to line up text by pressing the space bar. Even if the text looks evenly aligned on the screen, it won't be lined up when printed. Use tabs instead.

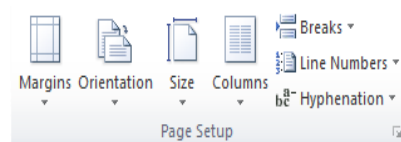
1.5 Page Setup

Page set up includes setting the margins within a page, choosing the page orientation, set page numbering, and creating headers and/or footers.

1.5.1 Margins determine the spaces between the edges of the paper and the text of the document by default, top and bottom margins are set to 1'' (2.54cm), while the left and right margins are set to 1.25'' (3.17cm). Some documents will require larger or smaller margins than those set by default.

TO CHANGE THE MARGIN:

On the **page layout** Tab, in the **page Setup** group, click **Margins**

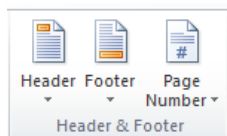


Click the margin type that you want. For the most common margin width, click **Normal**. You can also define your own margins. To do this click **Margins/Custom Margin**; the page setup dialogue box opens. And then in the **Top**, **Bottom**, **Left**, and **Right** boxes, enter new values for the margins.

1.5.2 Header and footer

Header is a text that is printed in the top margin of every page in a document. **Footer** is printed at the bottom of every page. You can also create different headers and footers for first pages or for even and odd pages. You can insert text, pictures, pages, numbers, current date or time.

1. On the **insert** tab, in the **Header & footer** group, click **Header** or **Footer**.



- a. Click the header or footer design that you want.
The header or footer is inserted on every page of the document

Activity 1.10

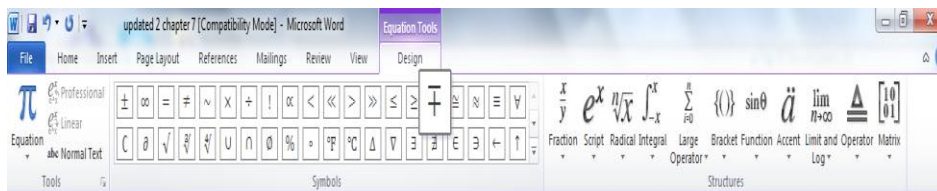
Page setup: Open a new document; set the top and bottom margins 2cm, the left and right margins 2.5cm; also create a Footer.

CHAPTER 2: EQUATIONS

The equation tools in MS Word are used for creating all kinds of equations used in mathematics, science and engineering.

2.1 Creating an equation

- Click where you want to insert the equation.
- Select **Insert** from the menu bar and choose **Equation** from the *symbol group*. The figure below pops up as well as the inscription box '[type equation here]'. The equation is then built in the inscription box.
- Select the appropriate template (mostly under **structures group**, see figure below) in the equation tab and type to obtain the desired equation.



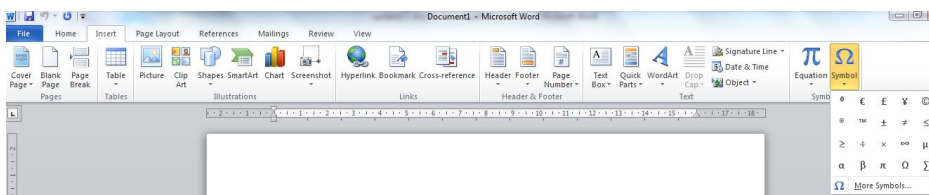
2.1.1 Inserting symbols into equations

Sometimes, 'symbols' or special characters must be used in the equations. These can be done in the following ways:

- Follow the steps in section 2.1 to point 'b'. Under **symbols group** are some limited special characters. The appropriate character can then be selected and used in the equation.
- Select **Insert** from the menu bar and **symbol** in the *symbol group*. The appropriate symbol can then be selected and used in the equation.

2.1.2 Entering text in an equation

To add a phrase to an equation, e.g. "for all" in an expression like $|x_n p - \dots - x_o| < \epsilon$ for all $n \geq N$, select where you want to enter the phrase. Under **tools group**, select **abc Normal text** and type the phrase.



You build equations by picking templates and symbols from the equation tool and typing variables and numbers in the slots provided. As you build an equation, the Equation block automatically adjusts font sizes, spacing, and formatting in keeping with mathematical typesetting conventions. You can also adjust formatting as you work and redefine the automatic style.

2.2 Editing an equation

If you want to edit an equation, select it and the equation toolbar will be highlighted. Select the toolbar and make the changes you want. You can add, delete, or change elements in an equation. You can also apply a different style, size, or formatting to text, or adjust spacing and location of elements.

When you have finished editing, click anywhere outside the equation editor object.

Activity 2.1

Open the equation tools. Study the toolbar and build the following equations:

PP2.1
$$E = E^0 - \frac{RT}{zF} \ln \frac{[Red]^a}{[Ox]^b}$$

PP2.2
$$\phi = \int \left(4e^{2x+4} + \frac{3}{4x-1} \right) dx$$

PP2.3
$$\tau_{yx} = -\frac{dV_x}{dy}$$

PP2.4
$$S_p = \sqrt{\frac{(x_{i1} - \bar{x}_1)^2 + (x_{i2} - \bar{x}_2)^2 + \dots + (x_{ik} - \bar{x}_k)^2}{N-k}}$$

CHAPTER 3: CREATING TABLES

3.1 To Insert or create a table

Tables are composed of **columns and rows**, and the intersection of a column and row is called a **cell**. Before inserting a table in a document, first consider how many columns and rows your table will require. Several different methods exist for creating tables:

3.1.1 Using table menu

*Click where you want to insert a table. On the insert tab, in the tables group, click table, under **insert Table**, drag to select the number of rows or columns that you want.*

3.1.2 Using the insert table command

You can use the **insert Table** command to choose the table's dimensions and format before you insert the table into a document.

*Click where you want to insert a table. On the insert tab, in the tables group, click Tables, and then click **Insert Table**. Under Table Size, enter the number of columns and rows. Under AutoFit behavior, choose options to adjust the table size.*

3.1.3 Creating table by drawing

With this option you can draw a complex table- for example; one that contains cells of different height or a varying numbers of columns per row

Activity 3.1: create the following simple table for keeping record of your monthly expenses

EXPENSES JANUARY, 2012	Items	Description	Amount, \$
	Food	Fruit, groceries, canteen	500.00
	Toiletries	Soap, toothpaste, T-roll, deodorant	50.00
	Transportation	Taxi fare, bus fare	35.00
	Stationery	Pens, books, paper, photocopying..	50.00
	Phone	Phone cards	75.00




Create a table that has 6 rows and 4 columns by using the insert table button. Insert the headings and fill the table except the first column. Practice the selection methods and adjusting column widths and rows heights below.

3.2 Table selection methods

To Select

- The contents of a cell and the end-of-cell marker. Click the left edge of the cell
- The contents of the cell in the next column: Press TAB
- The contents of the cell in the previous column: Press SHIFT + TAB
- A row: Click to the of the desired row, or
Double-click to the left of a cell in the row or
With the insertion point in the desired rows, choose Table/select/Row
- a column: Position the mouse at the top of the column. When a solid arrow appears, click the left mouse button once or. With the insertion point in the desired column, choose Table/Select/Column
- a range of cells, rows or columns: Drag the mouse pointer over the cells, rows, or columns, or select the first cell, row or column in the range: Press SHIFT, and then select the last cell, row or column in the range.
- An entire table: Click in the table and choose Table/Select/Table or
- Hold down the ALT keys as you double-click in the table, or
- Click the table move handle outside at the upper left of the table

3.3 Adjusting column widths and row heights

-  Drag the vertical or horizontal cell boundary gridline left or right
-  Choose Table/Table Properties and make selections in the Row or Column tabs
-  Choose Table/AutoFit and then make selection

3.4 Inserting and deleting columns and rows

When you insert columns and row, the inserted column or row takes on the formatting of the previous column or row

- To insert a column or row position the cursor in the column or row, then choose Table/Insert and make your choice
- To insert a row at the end of a table, simply press the TAB keys with the cursor in the last cell
- To delete a column or a row, position the cursor in the column or row you want to delete, choose Table/Delete and make your choice

3.5 Navigating a table and entering data

- Pressing the TAB key moves the insertion point to the cell on the right and selects the cell on the right

- Pressing the arrow key moves the insertion point

Each cell can contain more than 1 paragraph and be formatted with its own unique character and formatting commands. You can think of a table cell as a mini page. The main difference between typing table text versus normal text is in using the TAB key. Since the TAB key is used as a navigation tool, to insert a real tab in a cell you must press CTRL+TAB

3.6 Merging and splitting cells

Merging and splitting cells is extremely useful when customizing a table to your exact specification. Once cells have been merged, or combined into a single cell, the action of undoing this action is called splitting.

To merge or split cells

- Select the cells you want to merge or split, by clicking the left edge of a cell and then dragging across the other cells that you want.
- Under **Table Tools**, on the **layout** tab, in the **Merge** group, click Merge cells or split cells accordingly

Activity 3.2

*Insert a column before the first one; merge the cells, type in the text: from the menu bar, click on **layout tab**, click on the **Text Direction icon**, keep changing the designs until you get the desired orientation.*

3.7 Formatting tables

Formatting a table will make it more attractive and easier to read. You can choose to format an entire table, a selection of rows or columns, or a selection of cells. By default, word applies a border to table cells. The tables and borders tool bar provides a number of convenient shortcuts for formatting tables.

3.8 Breaking rows across pages

If your table spans across a page break, word breaks that table into two.

If you want to keep your table intact:

1. Under **Table Tools**, click the **layout tab**.
2. in the **Table Tools**, click the **select**, and then click **select Table**
3. Under **Table Tools**, click **Design tab**
4. In the **Table styles group**, click **Borders**, and then do one of the following
 - a. Click one of the predefined border sets

- b. Click borders and shading, click the borders tab, and then choose the options that you want

When you work with a very long table, it will be divided wherever a page break occurs. You can make adjustments to the tables so that the table headings are repeated on each page.

- Select the heading row or rows. The selection must include the first row of the table
- Under **Table Tools**, on the **Layout tab**, in the **Data** group, click **Repeat Header Rows**

3.9 Performing a simple calculation

Position the cursor in the cell where you want to perform the calculation and then click on the Table Tools, then click layout; you will see **formula** at the extreme right of the various commands that is displayed. You can use this command to add a formula to cell to perform simple calculation such as **sum**, **average**, **product** etc. You can build the formula in the **formula dialogue box**.

To recalculate the formula after a number has changed, you must select the cell that contains the formula and then press F9 Function key to update the field

Activity 3.3

Add a Total row to your table and calculate the total expenditure made. Change the amount for the items to reflect your actual monthly spending and insert missing items. Recalculate the total amount by pressing F9

CHAPTER4: USING THE DRAWING TOOL BAR

With the drawing Tool bar, you can embellish your document with labels, lines and arrows, and a variety of ready-made shapes, called **AutoShapes**. Drawing objects include shapes, diagrams, flowcharts, curves, lines, and WordArt.

- **ADD A DRAWING TO YOUR DOCUMENT.** When you create a drawing in Microsoft Word, you must begin by inserting a drawing canvas. The drawing canvas helps you arrange and resize the objects in your drawing.
- Click in your document where you want to create the drawing. On the **insert** tab, in the **illustration** group, click **shapes**, and then click **New Drawing Canvas**. A drawing canvas is inserted in your document. You draw lines and shapes by first clicking the appropriate button on the drawing tool bar. With the cross-hair pointer, you then create the object such as line by dragging with the mouse. Once you create an object, it is selected and surrounded with sizing handles.
- With **AutoShapes**, unlike lines and arrows, you don't have to drag the mouse to insert an object. If you click in your document, the **AutoShape** will appear in its default size. You can then move and resize it as necessary.
- To **resize** an object drag the sizing handle. To resize a circle or square, hold down the SHIFT key while dragging a sizing at the corner with the mouse.
- To **insert** a circle (not an oval), you must hold down the SHIFT key while dragging with the mouse
- By default, word objects are outlined in black. To change an object's line or fill color, you select the object, the **format tab** opens, click on the **shape outline**, select you color choice from the theme color platform
- You can change the **width of a line**, Click on the object >**format tab**> **shape outline**>**Weight**
Choose the appropriate line width.
- To **move** an object, first you select it and then drag it with the mouse. Fine movement of object (nudge) is possible by using the arrow keys after selection

4.1 Layering and grouping objects

You have control over how objects are layered in a document. That is, you can choose to position an object in front (or behind) another.

- To change how objects are layered, you click the object >**format tab**> **Arrange group** and the choose the order option (either **bring to front** or **send behind**)

If your drawing is composed of multiple objects, you have to create a single group of the component objects before moving, copying, or resizing the drawing. **If you don't group your drawing, it may rearrange by itself as you work with the rest of the document.**

- To select multiple objects at once, hold SHIFT key down while selecting each object one-by-one. Then, to create a group of the selected objects, you click **>format tab> Arrange group> Group**
- To ungroup a selected object you click **>format tab> Arrange group> Group> ungroup**

4.2 Inserting text boxes

A Text box is a container for text, graphics, tables or other objects that you want to position in a document. Although you can also position these elements directly, you have greater flexibility when the object is inserted in a text box. (For example, an easy way to insert a text in the margin, as you can see it in the news letter, is to insert it in a text.

*To remove the border and fill color of the text box: Select the text box>format tab> shape outline> choose **No Outline**.*

Activity 4.1

Move the text box in front of the drawing and position it as it is on the figure. If necessary, resize the drawing object while keeping SHIFT down. Group the text box to the drawing object to finish the logo. Save your drawing on your pen drive.



4.3 Using WordArt

WordArt allows you to apply special effects to texts in a document, WordArt objects can be formatted in the same way as drawing objects.

CHAPTER 5: CREATE A WORKSHEET – Part 1

As a management trainee for the Sports Company, you are required to create an operating budget for the retail store of the company. Open excel, study the screen.

Look for the following: Menu bar, Formatting toolbar, Formula bar, Column letters, Row numbers, Cell indicator, Sheet tabs. The information or data you enter in a cell can be text, numbers, or formulas. Formula entries perform calculations using numbers or data contained in other cells. The resulting value is a variable value because it can change if the data it depends on changes. In contrast, a number entry is a constant.

Activity 5.1

Enter the following data to work in excel. The first data (140000) should be in cell B5.

2011 FIRST HALF BUDGET							
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
SALES	140000	135000	175000	210000	185000	185000	
Clothing	94000	89000	120000	145000	125000	125000	
Hard Good							
Total Sales							
EXPENSES							
Adverstising	30000	30000	30000	30000	30000	30000	
Lease	19000	19000	19000	19000	19000	19000	
Miscellane	1600	1600	1600	1600	1600	1600	
Overhead	22000	22000	22000	22000	22000	22000	
Total Expenses							
INCOME							

5.1 Clear an entry

- **Press Delete**

5.2 Edit data

- An entry in a cell can be entirely changed in the Ready mode or partially changed or edited in the Edit mode. To use the Ready mode, you move the cell selector to the cell you want to change and retype the way you want it to appear. As soon as a new character is entered, the existing entry is located
- If you need to change only a part of an entry, it is quicker to use the Edit Mode. To change to Edit mode, double-click on the cell whose content you want to Edit

When a text Entry is longer than the cell's column width, Excel will display as much of the entry as it can. If the cell to the right is empty, the whole entry will be displayed. If the cell to the right contains an entry, the overlapping part of the entry is not displayed.

5.3 Copy data

- You can use the **Copy and Paste** commands by clicking on the icons on the clipboard in the menu bar.
- You can select a paste area that consists of multiple cells, called a range, and paste the contents to all cells in the selection at once. To select a range, drag the mouse from one corner to the other, or use the SHIFT+Arrow Key.
- You can use the Fill command on the Edit menu to copy data. This command requires that the destination range is adjacent to the source and the entire range is selected before the command is used.

5.4 Enter formulas

A formula always begins with an equal sign (=). Formulas use arithmetic operators (+, -, /, *, ^). The calculation is performed on numbers or cell references. Usually cell references are used, and when the numeric entries in the referenced cell(s) change, the result of the formula is automatically recalculated.

Activity 5.2

Enter the formulas in cell H5 to sum the numbers from JAN to JUN: Move to H5; Type =B5+C5+D5+E5+F5+G5; press Enter; move back to H5. The result of the formula is displayed in the Formula Bar.

5.5 Alignment

The default alignment is left for a text entry and right for a number entry. Vertical alignment is bottom for both types of entries. Alignment can be changed on the **Home tab** in the **alignment group**. You can use any of the three alignment buttons in the formatting Toolbar, right-clicking in the cell to begin the necessary changes. A range of cells can be formatted quickly by selecting the range and then using the command or button. To select a nonadjacent range, you select the first cell or range of cells, then hold down the CTRL and select the other cells.

Activity 5.3

Change the alignment for the column heading to right-aligned. Indent the row headings in cells A5 through A7 and A10 through A16 under the section headings. Select A5 through A7; hold down Ctrl; select A10 through A16; click the increase indent button on the Alignment group in the Home TAB. (One indent is equal to the width of one character).

CHAPTER 6: CREATE A WORKSHEET – Part 2

Activity 6.1

Open your worksheet. You will complete this worksheet by entering the remaining formulas and functions. The complete budget worksheet, after the exercise is completed is shown below

2011 FIRST HALF BUDGET								
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVG
SALES								
Clothing	\$140,000	\$135,000	\$175,000	\$210,000	\$185,000	\$185,000	\$1,030,000	\$171,667
Hard Good	\$94,000	\$89,000	\$120,000	\$145,000	\$125,000	\$125,000	\$698,000	\$116,333
Total Sales	\$234,000	\$224,000	\$295,000	\$355,000	\$310,000	\$310,000	\$1,728,000	\$288,000
EXPENSES								
Advertising	\$9,360	\$8,960	\$11,800	\$14,200	\$12,400	\$12,400	\$69,120	\$11,520
Cost of Goods	\$135,720	\$129,920	\$171,100	\$205,900	\$179,800	\$179,800	\$1,002,240	\$167,040
Salary	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$180,000	\$30,000
Lease	\$19,000	\$19,000	\$19,000	\$19,000	\$19,000	\$19,000	\$114,000	\$19,000
Miscellaneous	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$96,000	\$16,000
Overhead	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$132,000	\$22,000
Total Expenses	\$232,080	\$225,880	\$269,900	\$307,100	\$279,200	\$279,200	\$1,593,360	\$265,560
INCOME	\$1,920	\$-1,880	\$25,100	\$47,900	\$30,800	\$30,800	\$134,640	\$22,440
						Profit Margin		7.79%

6.1 Enter formulas using point made

First enter the formula to calculate total sales. This formula will sum the numbers for clothing and hard goods sales in cells B5 and B6. Rather than typing the cell references into the formula, you will enter them by selecting the worksheet cells: Move to B7; Type =; Click B5; Type +; Click B6; press Enter

6.2 Copy formulas

Just like text and numeric entries, you can copy formulas from one cell to another by selecting the cell, and then Copy and Paste.

Activity 6.2

Copy the formula in cell B7 to cells C7 through G7. Move to C7. The formula displayed in the formula bar is C5:C6. The formula to calculate the February total sales is not an exact duplicate of the formula used to calculate the January TOTAL SALES ($=B5 + B6$). This is because the references in the formula are relative references

6.3 Relative reference

A relative reference is a cell or range reference in a formula whose location is interpreted in relation to the position of the cell that contains the formula. When a formula is copied, the referenced cells in the formula automatically adjust to reflect the new worksheet location. The relative relationship between the referenced cell and the new location is maintained.

Activity 6.3

*Insert 2 rows below EXPENSES by right-clicking in cell A10 salary and select Insert/Entire row. Type in **Advertisement** and **Cost of Goods**. Enter the formulas to calculate the advertising and cost of goods sold. These numbers are estimated by using a formula to calculate the number as a percent of total sales. The Sport Company calculates advertising expenses at 4% of Sales and cost of goods expenses at 58% of sales. The formula to make these calculations for January takes the number in cell B7 and multiplies it by the percentage.*

- To make the process of entering and copying entries even easier, you can enter data into the first cell of a range and have it copied to all other cells in the range at the same time by using Ctrl+ Enter to complete the entry

Activity 6.4

*Select cells B10 through G10; type $=B7*4\%$; Press Ctrl +Enter. In the same manner, select the range B11 through G11 and enter the formula $=B7*58\%$ in cell B11 to calculate the cost of goods sold for January through June.*

6.4 Enter functions

It is faster and more accurate to use functions for calculations. Functions are prewritten formulas that perform certain types of calculation automatically. The syntax or rules of structure for entering functions is: Function name (argument 1, argument 2,...). Most commonly the argument consists of numbers or references to cells that contain numbers. If a function starts the formula enter an equal sign before the function name [e.g. =SUM(D5:F5)/25]. Excel includes several hundreds of functions divided into 9 categories. Use Help for detailed explanation of every function.

Activity 6.5

Use the SUM function to calculate the total expenses for January. Because the SUM function is the most commonly used function, it has its own tool bar button Σ .

Move to cell B16; click Σ . Press Enter: Copy the function from cell B16 to cells C16 through G16, move to C16.

The result calculated (225880, is displayed in cell C16, and the copied function is displayed in the formula bar.

Now that the total expenses are calculated, the formula to calculate income can be entered. Income is the difference between sales and total expenses. Select the range B18 through G18; enter the formula =B7-B16 in cell B18; Press Ctrl + Enter

Finally, the total over the six months needs to be entered down column H. Move to H16, click Σ (AutoSum); notice that the moving border around cell H5 and not the row. AutoSum first checks for values above and then to the left of the active cell. If the values above are not the range you want to sum, you can edit the function by selecting another range

Select B16 through G16, Press Enter; copy the function down the column to cell H18;

6.5 Clear formulas

H18 displays a 0 because the formula was copied into the cell that references empty cells. Cells H9 and H17 also display zeros for the same reason. You will clear the formulas from these cells using the fill handle

Activity 6.6

Select H8 through H9; point to the fill handle of the selected range, and when the mouse pointer changes to +, drag the mouse up until the entire selection is gray; release the mouse button; in the same manner, delete the formula from cell H17

6.6 Paste function

You decided you want to add a new column showing the average values for the six months. Enter and right-align the heading **AVG** in cell I13; move to I5; click *fx. Insert Function*; the insert function dialogue box appears on the screen. Select the function you want to use, that is selected **AVERAGE**; Click **OK**

The proposed argument range is displayed in the Number 1 text box. Because the proposed argument range is incorrect (it includes the total value in cell H5), you need to specify the correct range (B5:G5)

The numbers or the cell references containing the numbers

- can be entered in the text box directly or
- can be entered by selecting the cell or range from the worksheet. (Selecting the range is faster)

Activity 6.7

Select B5 through G5; Click **OK**; copy the function down column I through row I8. Notice three cells display #DIV/0!. This indicates a division error occurred because the formula divides by zero.

6.7 Absolute references

An **absolute reference** is a cell or range references in a formula whose location does not change when the formula is copied. To stop the relative adjustment of cell references, enters a \$ character before the column letter and row number. When a formula containing an absolute cell reference is copied to another row and column location in the worksheet, the cell reference does not change. It is an exact duplicate of the cell reference in the original formula. A cell reference can also be a **mixed** reference. In this type of reference, either the column letter or the row number is preceded with the \$. This makes only the row or column absolute.

You can change a cell reference to absolute or mixed by typing in the \$ sign directly or using **ABS (Absolute) Key F4**. To use the **ABS** key, the program must be in the Edit Mode. When you continue to press **F4**, the cell references will cycle through all possible combination of cell reference types.

The cell references in the formula are color coded to match the borders around the referenced cells.

Activity 6.8

You decided you want to show the proportion of clothing and hard goods in the total sale. You want these data to appear in J5 and J6 cells, respectively.

Enter the formula in cell J5 as $=H5/H7$. Press Enter, copy the formula by dragging the + handle to J6. Cell J6 displays #div/0!. You need to change the H7 cell reference to absolute. Move the insertion point to the cell reference H7; Press F4 press Enter; copy the revised formula to cell J6

6.8 Cell comments

To clarify the meaning of values, cell comments can be added. Cell comments are notes that are attached to a cell and automatically appear whenever the mouse pointer rests on the cell. The cell displays a red triangle in the upper right corner to indicate the cell contains a comment

Activity 6.9

Add comments to clarify the hard goods proportion value. Click on the cell you would like to insert the comment, click on the Review Tab, on the comment group, and choose **New comment**; type in the comment text box: **Total hard goods as a percent of total sales**; close the comment by clicking anywhere outside the comment box; display the comment by pointing to cell J6; add comment, **Total clothing sales as a percent of total sales**, to cell J5; close the comment box.

the last formula you need to add to calculate the total profit margin for the first six months. You will enter the formula in cell H20 and a descriptive text entry in cell G20. In cell G20 enter and right-align the entry **profit margin**; In cell H20 enter the formula $=H18/H17$

6.9 Adjust column width

A text entry that is larger than the column width will be fully displayed only if the cells to the right are blank. If the cells to the right contain data, the column width is automatically increased to fully display entry. Whenever the width of a cell is too small to display the entire number, the number signs ##### are displayed. The column width can be adjusted by

- Dragging the column divider line located to the right of the column letter OR
- Choose Home ⇄ Cells ⇄ Format ⇄ Column Width and enter a value in the Column Width dialog box.

Activity 6.10

Point the column divider line to the right of the column letter A and drag the mouse pointer to right. When the mouse pointer displays 14.00 release the mouse button.

6.10 Number format

Number formats affect how numbers look on screen and when printed. They do not affect the way excel stores or uses the values in calculation. If no symbol is used, Excel leaves the

number unformatted. Unformatted numbers are displayed without thousand separators and with as many decimal place settings as the cell space allows. The **currency format** displays the number entries in the selected range with a currency symbol, comma, and 2 decimal places. The column width is automatically increased to fully display the formatted values. **Accounting format** also displays numbers as currency. The primary difference between the Accounting and Currency formats is that the Accounting format aligns numbers at the decimal places and places the \$ sign in a column at the left edge of the cell space.

Activity 6.11

Change the format of B5 through H8 to display \$ signs, commas, and 2 decimal places. A quick way to select a range is to click on the first cell of the range and then hold down the SHIFT key while clicking on the last cell of the range. Select the range B5 through I 18; Choose Home ⇨ Number ⇨ Currency ⇨ Accounting

6.11 Apply Styles

A style consists of a combination of formats that have been named and be quickly applied to a selection. Normal is default style. It sets the number format to General and controls other format settings that are applied to all entries.

Example of a few predefined styles are

Normal 89522; Comma 89,522.00; Comma(0) 89,522; Currency \$89,522.00 Percent 89.52200%

The percent format can be selected by choose Home Tab ⇨ Number ⇨ click on the % icon or button

Activity 6.12

Display the two proportion values in cells J5 and J6 and the profit margin to display as a percent. Select J5 and J6; choose the percentage format and the Accounting format. Format the profit percent margin to display two decimal places.

6.12 Insert Rows

Individual cells or entire rows or columns can be inserted and deleted from worksheet. The formats associated with surrounding cells are applied to the newly inserted cell, row or column. When you insert or delete cells, rows or columns, all cell references in formulas and functions are automatically adjusted to their new location. This keeps formulas up to

date. However, a worksheet formula containing a reference to a deleted cell displays a #REF! error message.

Move to A3; choose Home Tab ⇨ Cells ⇨ Insert ⇨ Insert Row

6.13 Move cell contents, Centers across selection

To center-align across a selection, the text you want aligned must be in the leftmost cell of the range. To move the cell content, you could cut and paste the content, or you can drag the cell border to move the cell contents. This is similar to copying by dragging. Dragging is the quickest and most useful when the distance between cells is short and they are visible within the window, where as Cut and Paste is best for long-distance moves.

Combining all cells in the selected range into one creates a merged cell. The cell reference for the merged cell is the upper left cell within the merged cell

Activity 6.13

Move to C2; point to the border of the cell and when the mouse pointer shape is an arrow, drag the mouse pointer to cell A2 and release the mouse button. The contents of cell C2 are copied into cell A2 and cleared from the original cell.

Now you are ready to center the worksheet title across cell A2 through I2. Select A2 through I2, Click Merge and Center button on the formatting toolbar

6.14 Final formatting to enhance the worksheet appearance

Activity 6.14

Format the Title of the worksheet to Times New Roman typeface and 14 point font size, Bold; Format the row headings in cells A8 and A11 to bold

Change the row headings in cells A4, A9 and A18 to bold and italic;

Move to A5; Click **B** Bold and **I** Italic button on the formatting toolbar; Use the format painter button on the format Painter button on the Standard Toolbar to copy format from A5 to A10 and A9, because it is a quicker method than to format the individual cells. Double click Format Painter button; Click A10; Click A19; Click Format Painter button;

Bold the column headings

Select B4 through I4, Click **B** bold

Adjust the width of the column A to fully display the row heading again by using the AutoFit shortcut to make this change


Double-Click the right column boundary of Column A

6.15 Header and Footer, Page orientation

A **header** is a line or several lines of text that appears at the top of each page just below the top margin. A **footer** is a line or several lines of text that appears at the bottom of each page just above the bottom margin. The text can be formatted like any other text.

In addition, you can control the placement of the header text by specifying where it should appear: left-aligned, centered, or right-aligned in the header or footer space.

To add a header

- Click the **File Tab**.  Position the cursor on **print**; then under **Settings** find **Pages Setup** and click it. Then open the **Header/Footer** tab [Note this only works if a printer is connected to the P.C]
- Also we can choose **Insert** from the Menu bar; then choose **Header and Footer** and select the appropriate needed

Activity 6.15

Add a header: **Prepared by [your name] [your ID No.] {date}**

Click Print Preview button on the Standard toolbar; Click Page Setup; Open the Header/Footer tab; add the header; Click O.K.

Notice that the entire sheet does not fit across the width the page. To see the second page Click Next. To Print the Entire sheet on a single page, you can change the page orientation to **Landscape** style

The worksheet may be easier to read if the row and column lines were printed: Click stepup.. From the Page tab select Landscape; From the Sheet tab select Gridlines, Click OK Save your work

CHAPTER 7: ANALYZING A COMPLEX WORKBOOK

Activity 7.1

After looking at the first-half budget for 2011, the store manager expressed some concern that the profit margin is so low and wants you to look at how this value can be adjusted to be closer to the industry standard of 10% for the first six months period.

You also have to create a worksheet for the data for the second half of the year (shown below), in which the profit margin should be between 12-13%. Finally, the manager wants you to create a summary worksheet showing only the total values for the 2011.

2011 FIRST HALF BUDGET								
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	AVG
SALES								
Clothing	\$140,000	\$135,000	\$175,000	\$210,000	\$185,000	\$185,000	\$1,030,000	\$171,667
Hard Good	\$94,000	\$89,000	\$120,000	\$145,000	\$125,000	\$125,000	\$698,000	\$116,333
Total Sales	\$234,000	\$224,000	\$295,000	\$355,000	\$310,000	\$310,000	\$1,728,000	\$288,000
EXPENSES								
Advertising	\$9,360	\$8,960	\$11,800	\$14,200	\$12,400	\$12,400	\$69,120	\$11,520
Cost of Goods	\$135,720	\$129,920	\$171,100	\$205,900	\$179,800	\$179,800	\$1,002,240	\$167,040
Salary	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$180,000	\$30,000
Lease	\$19,000	\$19,000	\$19,000	\$19,000	\$19,000	\$19,000	\$114,000	\$19,000
Miscellaneous	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$96,000	\$16,000
Overhead	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$132,000	\$22,000
Total Expenses	\$232,080	\$225,880	\$269,900	\$307,100	\$279,200	\$279,200	\$1,593,360	\$265,560
INCOME	\$1,920	\$-1,880	\$25,100	\$47,900	\$30,800	\$30,800	\$134,640	\$22,440
						Profit Margin	7.79%	

7.1 Copy, name and move a sheet

Although the workbook already includes 2 extra blank sheets, if you pasted the data into an existing sheet, the column width settings would not be copied and you would need to reset the width.

Instead, to duplicate an existing sheet with all its formats, you need to create a new sheet.

- To copy the active sheet into a new sheet hold down Ctrl while dragging the sheet tab to where you want the new sheet inserted. The mouse pointer changes as you drag the mouse from one tab to another. The + indicates that the sheet is being

copied. A black triangle ▼ also appears, indicating where sheet will be inserted. Excel names the copy of the sheet Sheet1 (2) and inserts it before sheet2.

- Just to move the sheet, drag the sheet tab without holding down Ctrl.
- To create a new blank sheet: Click File Tab, New or use Ctrl+N

Activity 7.2

First add the budget data to the workbook for the second half of 2011. Put this data in a separate sheet (Sheet2) in the same workbook file. Click on the Sheet1 tab; Hold down Ctrl; Drag the sheet1 tab to Sheet2 tab (the ▼ appears between the Sheet1 and Sheet2 tabs); Release the mouse button and then Ctrl.

Each sheet in a workbook can be assigned a descriptive name to identify the contents of the sheet. A formula reference to cells in different worksheets in a workbook allows you to use data from other worksheets to calculate new values based on this data.

Double-clicking the Sheet1 tab; Type **First Half**; Press Enter; Change the name of the Sheet1(2) tab to **Second Half**; Change the title and the month headings; To update the budget for July through December, enter the new numbers As you can see, the profit margin of 13.77% for this half is above the industry standard of 13.5% for that period.

7.2 Referencing multiple sheets

A formula reference to cells in different worksheets of the same workbook allows you to use data from multiple sheets, and to calculate new values based on this data. The formula contains a sheet reference as well as a cell reference. The sheet reference consists of the name of the sheet enclosed in quotes. It is separated from the cell reference by an examination mark. For example

= "Sheet2"!B17 would display the entry in cell B17 of Sheet2 in the active cell of the current sheet.

A formula can be created using reference on the multiple sheets; for example:

=Sheet1!A1 + Sheet2!B2

The link can also be created by entering a 3-D reference in the formula. A **3-D reference** is a reference to the same cell or range of multiple sheets in the same workbook. A 3-D reference consists of the same names of the beginning and ending sheets enclosed in quotes and separated by a colon. This is followed by an exclamation mark and the cell or range reference. The cell or range reference is the same on each sheet in the specified range.

For example the formula =SUM("Sheet1!:Sheet4"!H6:K6) sums the values in cells H6 of sheet1 through to Sheet4. The formula =SUM("Sheet1:Sheet4"!H6:K6) sums the values in the range H6 through K6 of sheet1 through 4. If a sheet is inserted or deleted, the range is automatically updated.

Although a 3-D reference can be entered by typing it using the above syntax, it is much easier to enter it by pointing to the cells on the sheet.

- To enter a 3-D reference, select the cell or range in the beginning sheet and then hold down Shift and click on the sheet tab of the last sheet in the range. This will include the indicated cell range on all sheets between and including the first and last sheet specified.

Activity 7.3

You will enter a 3-D reference formula in cell H22 and a descriptive text entry in cell G22 to display a year-to-date income total in cell H22

*In cell G22 enter and right-align the entry **Year-to-date**, move to H22; Click AutoSum Click H19: , Hold down Shift and Click the first Half Tab; Release Shift; Press Enter; Move to H22; Change the format of cell H22 to accounting with zero decimal places*

7.3 Link work worksheets or workbooks

A link creates a connection between the files that updates the linked data automatically in one file whenever the data changes in other file. The link between the workbook files is formed by entering an external reference formula in one workbook that refers to a cell in another workbook.

- To created an external reference formula *copy the contents of the source cell to the clipboard, switch to the dependent workbook or worksheet, and then use the Edit/Paste Special/ Paste Link command*

Activity 7.4

You presented the completed first and second half worksheets of the estimated operating budget for 2011 to the regional manager. The manager wants you to create another worksheet showing the entire annual budget and to include a row to calculate the monthly profit margin

*Create a **Year** worksheet:*

*Copy the **first half** sheet to a new sheet you will name **Year**; edit the title, insert additional blank rows and so on (see the 2011 budget table) ; Delete all data and then create links between the year and first Half sheet and then between the Year and the second half sheet;*

the monthly values in the year sheet, such as B7, contain linking formulas that reference the appropriate cells in the First Half and Second half sheets, others, such as the total formulas and the formula to calculate the income, do not reference cells outside the year worksheet

7.4 What if analysis

What-if analysis is a technique used to evaluate the effects of changing selected factors in a worksheet. By substituting different values in cells that are referenced by formulas, you can quickly see the effect of the changes when the formulas are recalculated. This is called what-if analysis.

Activity 7.5

The manager wants the store to show an annual profit margin of between 12-13%. The total profit margin of 11.11% is below this objective. In addition, the manager wants the first half profit margin to meet the industry standard of 10% for that period. After some consideration, you decide to reduce the monthly salary expenses by scheduling fewer employees to work during the slow period of January to June to increase the first half profit margin

In the first half sheet substitute different salary expenses values for the 6 month: eg reduce the salary expenses to \$28,000 per month. Now looking in Cell H21 you can see the profit margin for the first half is 8.49%. This is still below the industry standard of 10%

7.5 Using Solver

A quicker way to find the salary expenses values that will increase the profit margin to 10% is to use the solver tool. Solver tool answers what-if problems by determining the value of a cell by changing values in one or more cells in the worksheet.

The Solver Add-in is a Microsoft Office Excel **add-in** program that is available when you install Microsoft Office or Excel. To use it in Excel, however, you need to load it first.

1. Click the **File Tab**, and then click **Options**.
2. Click **Add-Ins**, and then in the **Manage** box, select **Excel Add-ins**.
3. Click **Go**.


4. In the **Add-Ins available** box, select the **Solver Add-in** check box, and then click **OK**.

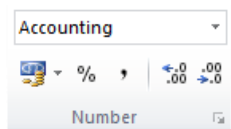
If **Solver Add-in** is not listed in the **Add-Ins available** box, click **Browse** to locate the add-in.

If you get prompted that the Solver Add-in is not currently installed on your computer, click **Yes** to install it.

5. After you load the Solver Add-in, the **Solver** command is available in the **Analysis** group on the **Data** tab.

How to select currency

1. Select the cells that contain the numbers that you want to display with a currency symbol.
2. On the **Home** tab, click the **Dialog Box Launcher**  next to **Number**.



3. In the **Category** box, click **Currency** or **Accounting**.
4. In the **Symbol** box, click the currency symbol that you want.

NOTE If you want to display a monetary value without a currency symbol, you can click **None**.

5. In the **Decimal places** box, enter the number of decimal places that you want to display.
6. In the **Negative numbers** box, select the display style for negative numbers.

NOTE The **Negative numbers** box is not available for the **Accounting** number format

Activity 7.8

Find the salary numbers that will make the solution to the formula in cell H21 10%.
Choose Tools/Solver.

In the solver parameters dialog box, you need to supply 3 items of information. The set Target Cell is \$H\$21. The number you want as the result off the formula is entered in the Equal to textbox.

To specify an exact number of 10%; Select Value of; Type 0.10

The range of cells whose content can be changed when the formula is computed is entered in the By Changing Cells textbox

Enter range by selecting B13 through G13

Solver Results dialog box is displayed when solver found a solution. The profit margin is 10% if salary expenses are reduced to \$23,640 per month

Keep solver solution; Select Answer from the report list box; Click OK. Make the Year sheet active. The total profit margin in Cell N23 is now 12.09% and falls within the range of industry standard

Prepare a summary budget for the year from the Total column in the year sheet of the Annual Budget in a new workbook. In case more changes are made to the annual budget, create a link between cells in the two workbook files. This will ensure that the Summary budget file will be automatically updated if changes are made in the annual.

The result will look like this

THE SPORT COMPANY 2011 SUMMARY BUDGET
--

SALES

Clothing	\$ 2,307,000
Hard Goods	\$ 1,575,000
Total Sales	\$ 3,882,000

EXPENSES

Advertising	\$ 155,280
Cost of goods	\$ 2,251,560
Salary	\$ 321,840
Lease	\$ 228,000
Miscellaneous	\$ 192,000
Overhead	\$ 264,000
Total Expenses	\$ 3,412,680

INCOME \$ 469,320

**PROFIT
MARGIN** 12.09%

Align a sheet on a page

Before you print worksheet, you want to create it horizontally on the page. To make this change:

Choose **Page Layout** from the Menu bar; then from the **Page Setup Group**, choose Custom Margins **and** assign margins of your choice to the Top/Left/Right/Bottom

You notice that the year sheet is larger than the one page but you would like to print it on one page. Click the **File Tab Button**, Click **Print**, Click **Page Setup**; Open **Page** tab; in the **Scaling** group Choose **Fit to**; click **O.K.**

NB you can only practice this if your computer is connected to a printer. Otherwise you don't have the Print Preview.

CHAPTER 8: CREATING CHARTS

Excel has the capability to create many types of charts from data in a worksheet. The different chart types emphasize data in various ways. You will create several different charts of sales data of The Sports Company.

Activity 8.1

*Create a worksheet about the company's sales record. The 2007 Tennis sale data should be entered in cell C6. The total figures should be calculated. Call the worksheet **Sales**. On the next sheet enter the projected values for 2011 and name the sheet **projected**. Tennis sale should be entered in cell C6 and the total calculated.*

THE SPORTS COMPANY				
Sales by Sport				
	2007	2008	2009	2010
Tennis	\$ 110,960	\$104,590	\$89,000	\$77,380
Golf	\$ 156,000	\$159,000	\$170,000	\$174,000
Camping	\$ 180,000	\$ 220,000	\$234,000	\$240,650
Fitness	\$200,000	\$236,000	\$268,000	\$290,175
Total	\$646,960	\$719,590	\$761,000	\$782,205

8.1 Autoformat

An autoformat is a built-in combination of formats that can be applied to a range. To use autoformat, you first specify the range you want affected by the formatting. You can select the range or you can let Excel select the range for you. To have excel automatically select the range, move the cell selector to any cell in the range.

Activity 8.2

Make the sales sheet active. Move to B5; Choose Format AutoFormat; Select Accounting 2; click OK

Make the same formatting to the projected sheet as well.

2011	
Tennis	\$ 55,380
Golf	\$ 176,000
Camping	\$ 255,650
Fitness	\$ 300,175
Total	\$ 787,205

8.2 Charts

Excel can produce 14 basic types of graphs or charts, with many different formats for each type. To create a chart, you select the worksheet range containing the data you want displayed as a chart plus any row or column headings you want used in the chart. Excel then translates the selected data into a chart based upon the shapes and contents of the worksheet selection.

A chart consists of a number of elements, which are important to understand so that you can identify the appropriate data to select in the worksheet. These are X-axis, Y-axis, Plot area, data series, data marker, chart gridlines, legend, chart title, X-axis title, and Y-axis title.

The Chart Wizard is an interactive program that guides you through the steps to create a chart.

When plotting nonadjacent ranges in a chart, the selections must form a rectangular shape.

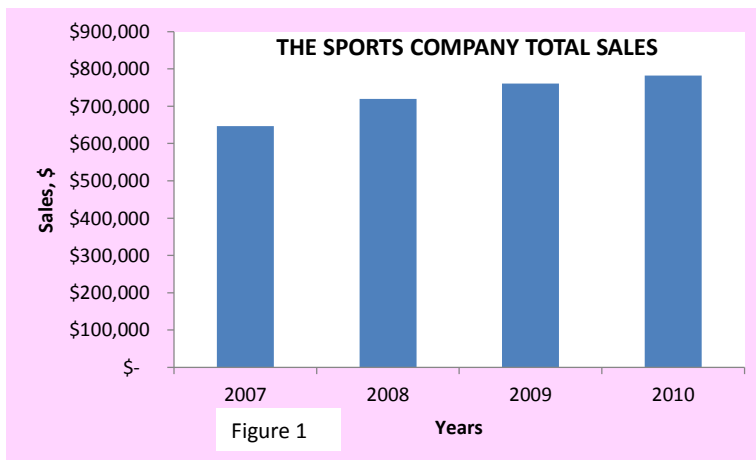
A chart can be displayed as an object in an existing worksheet called an embedded chart or in a separate chart sheet.

Activity 8.3

The first chart (figure 1) you will create will show the total sales pattern over the four years. The data are in cells C5 through F5 to label the X-axis. The numbers to be charted are in

cells C10 through F10. In addition, the label "Total" in cell B10 will be used as the chart legend, making the entire range B10 through F10. Notice that the two ranges are not adjacent ranges and are not the same size. Therefore the blank cell B5 will be included in the selection.

Select B5 through F5; Hold down Ctrl; Select B10 through F10; Click **Insert** ⇒ **Chart** ⇒ **Column** ⇒ on the chart layout Choose **layout 6**. Replace the default title in the chart title with **THE SPORTS COMPANY TOTAL SALES**; in the Category (X) axis textbox enter **years** and in the Value (Y) axis text box enter **sales**; Click outside the chart and the work is done.



Comment [s1]: Review later

8.3 Move and size the chart

When you move the mouse pointer into the different chart objects, it displays Screen tips to advise you of the chart element that will be affected by your action.

Activity 8.4

Point to the chart object and observe the different chart objects and when the chart area screen tip appears, drag the object so that it covers the worksheet range B13 through F24. Point to the lower right corner selection handle and drag the chart box down and to the right until it is displayed over cells B13 through G27

8.4 Change the type of chart

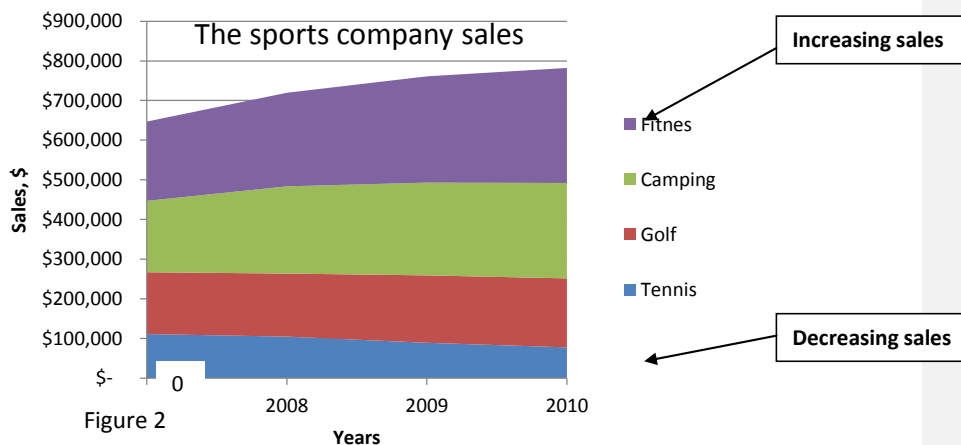
Different chart types can be chosen from the chart group in the following manner.

- Select data series, click insert, from chart group select chart type. Example pie chart, line chart, etc.

8.5 Create a chart with multiple data series

The second chart (figure 2) will display the sales data for each sports category for the four years. Select B5 through F9 **Insert** ⇨ **Chart**; From the chart type option list select **Line Chart**; to preview how the default line chart sub-type will look using the selected data, Click and hold 'PRESS and Hold to view sample' button; Release this button; Click Next>; Enter Titles

Move and size the chart until it covers cells B29 through G44. Change the chart type to Stacked Area; Right Click the different chart items and edit them to look like the figures below; Add textboxes and arrow



8.6 Create a combination chart

A combination chart uses two or more chart types to emphasize that the chart contains different kinds of information. It makes it easy to see comparisons between groups of data or to show different types of data in a single chart

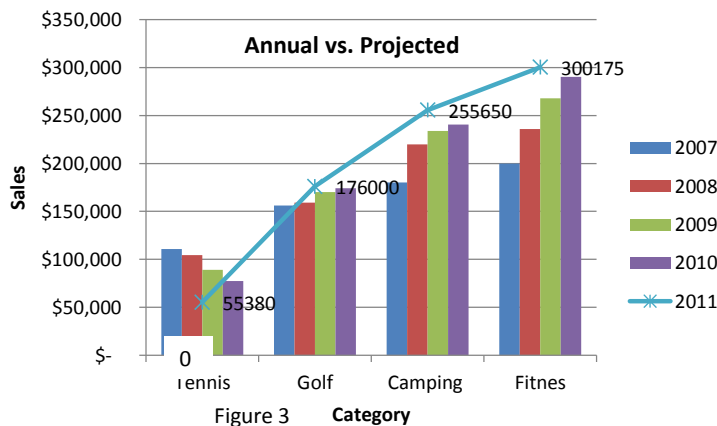
Activity 8.5

First you will create a column chart of sales data for the four years. Then you will add the projected sales data as a line (figure 3). You want to create this chart in its own sheet.

Select B5 through F9; Click insert in the menu bar, in the column chart type, select 2D clustered. Select **Design** from the menu bar and click “**Switch Row/Column**” to make sport category your abscissa.

After this, add the projected sales to the data series in the form of bar chart. *First Right-Click the Area, and choose **select Data** from the drop down list. Click **Add** (below the legend entries). In the **series value box**, select the **projected sales for 2011**. In the **series name**, type **2011**. Click **O.K.**, and another **O.K.** A column chart for the projected sales appears.*

*Right click one of these newly added bars. Choose **change series data type** from the drop down menu. Now, change the column chart to line chart and click **OK**. The column chart changes to a line chart. Right click the line and select **Add data labels**. The chart below appears.*



8.7 Create a pie chart

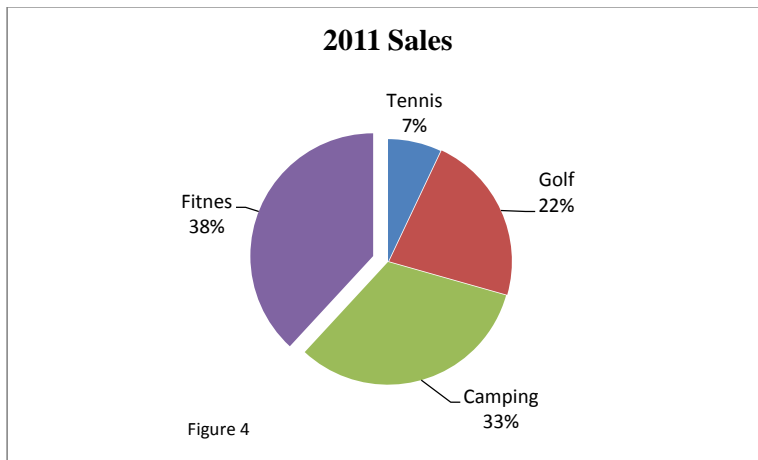
A pie chart compares parts to the whole, in a similar manner to a stacked-column chart. However, each value in the range is a slice of the pie displayed as a percentage of the total. Each value in the data series is displayed as a wedge of the pie chart. However, because the

chart does not contain a title or labels, the meaning of the chart is unclear. You will add a chart title and labels.

Activity 8.6

The next chart (figure 4) you will make will use the Projected worksheet data. The sales of fitness items have been increasing and you are particularly interested in the sales projection for 2011.

Make the projected sheet active; select B6 through C9; **Insert** → **Chart** → **Pie Chart** → **Exploded Pie**; in the **Chart layout** group select layout 1. Move and expand the chart to be displayed over cells E4 through I16



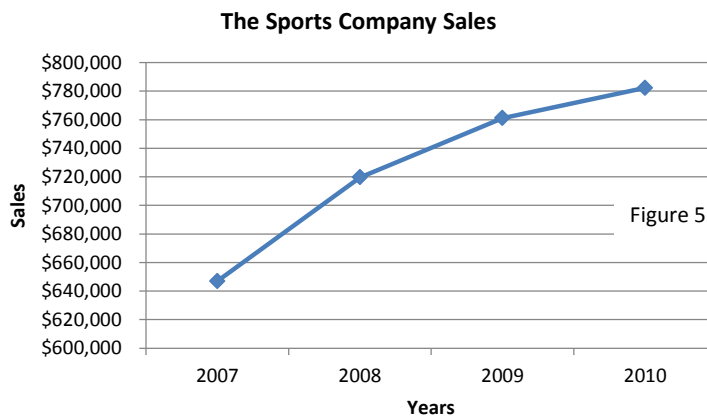
CHAPTER 9: DRAWING GRAPHS

9.1 Create a line chart

In excel, a line chart is not a Cartesian line graph as it is used in engineering, but is a graph of **interconnected points that are uniformly spaced along the x-axis, regardless of the x-values**. They are used to show trends (change in the data over time), emphasizing time and rate of change rather the amount of changed.

Activity 9.1

You are going to create a line chart from the Total sales figure of the sport company as it is shown in figure 5. Work independently until the chart looks like the one below



9.2 Draw XY (Scatter) charts

XY (scatter) charts are used to show the relationship between two ranges of numeric data. These are the type of graphs we use to draw curves representing experimental data or show the graphs of different functions.

Activity 9.2

The voltage within an electronic device varies with the time in accordance with the formula

$$V = 10e^{-0.5t}$$

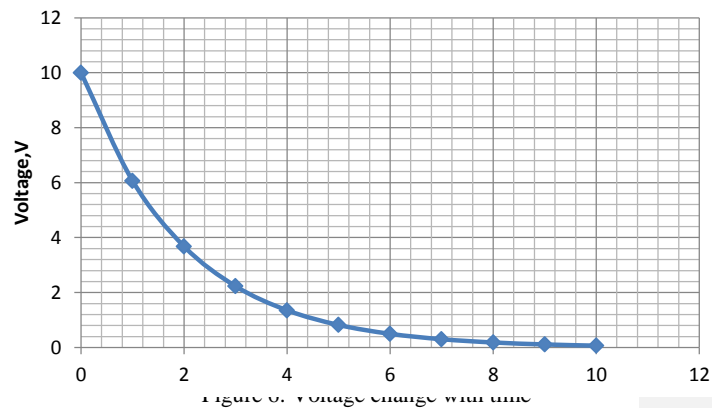
Where V represents Voltage and t represents Time, in seconds. Prepare a graph of the Voltage as the time varies from 0 to 10 seconds. Label the graph so that it is legible and attractive

Make a worksheet containing several values of V vs. t during the 10-second period. The independent variable (time) is tabulated in the first column (column A) and the dependent variable (voltage) is tabulated in the second column (column B). The dependent variables are generated by a formula.

The first values is calculated as $10*EXP(-0.5*B2)$. Then copy the formula from cell B2 through B12.

Create a chart as it is shown in the figure 6. Select the XY (scatter) chart where the data points are connected by smoothed lines. Format the title with font Ariel Size 10, the axes with Size 8. The chart area should not have borders.

Time, S	Voltage, V
0	10.00
1	6.07
2	3.68
3	2.23
4	1.35
5	0.82
6	0.50
7	0.30
8	0.18
9	0.11
10	0.07



9.3 Commonly used Excel Functions

ABS	Returns the absolute value of a number
ACOS	Returns the arccosine of a number
ACOSH	Returns the inverse hyperbolic cosine of a number
ASIN	Returns the arcsine of a number
ASINH	Returns the inverse hyperbolic sine of a number
ATAN	Returns the arctangent of a number
ATAN2	Returns the arctangent from x- and y-coordinates
ATANH	Returns the inverse hyperbolic tangent of a number
CEILING	Rounds a number to the nearest integer or to the nearest multiple of significance
COMBIN	Returns the number of combinations for a given number of objects
COS	Returns the cosine of a number
COSH	Returns the hyperbolic cosine of a number
DEGREES	Converts radians to degrees
EVEN	Rounds a number up to the nearest even integer
EXP	Returns e raised to the power of a given number
FACT	Returns the factorial of a number
FACTDOUBLE	Returns the double factorial of a number
FLOOR	Rounds a number down, toward zero
GCD	Returns the greatest common divisor
INT	Rounds a number down to the nearest integer
LCM	Returns the least common multiple
LN	Returns the natural logarithm of a number
LOG	Returns the logarithm of a number to a specified base
LOG10	Returns the base-10 logarithm of a number

MDETERM	Returns the matrix determinant of an array
MINVERSE	Returns the matrix inverse of an array
MMULT	Returns the matrix product of two arrays
MOD	Returns the remainder from division
MROUND	Returns a number rounded to the desired multiple
MULTINOMIAL	Returns the multinomial of a set of numbers
ODD	Rounds a number up to the nearest odd integer
PI	Returns the value of pi
POWER	Returns the result of a number raised to a power
PRODUCT	Multiplies its arguments
QUOTIENT	Returns the integer portion of a division
RADIANS	Converts degrees to radians
RAND	Returns a random number between 0 and 1
RANDBETWEEN	Returns a random number between the numbers you specify
ROMAN	Converts an arabic numeral to roman, as text
ROUND	Rounds a number to a specified number of digits
ROUNDDOWN	Rounds a number down, toward zero
ROUNDUP	Rounds a number up, away from zero
SERIESSUM	Returns the sum of a power series based on the formula
SIGN	Returns the sign of a number
SIN	Returns the sine of the given angle
SINH	Returns the hyperbolic sine of a number
SQRT	Returns a positive square root
SQRTPI	Returns the square root of (number * pi)
SUBTOTAL	Returns a subtotal in a list or database
SUM	Adds its arguments

SUMIF	Adds the cells specified by a given criteria
SUMIFS	Adds the cells in a range that meet multiple criteria
SUMPRODUCT	Returns the sum of the products of corresponding array components
SUMSQ	Returns the sum of the squares of the arguments
SUMX2MY2	Returns the sum of the difference of squares of corresponding values in two arrays
SUMX2PY2	Returns the sum of the sum of squares of corresponding values in two arrays
SUMXMY2	Returns the sum of squares of differences of corresponding values in two arrays
TAN	Returns the tangent of a number
TANH	Returns the hyperbolic tangent of a number
TRUNC	Truncates a number to an integer

Activity 9.3

A Car manufacturer wishes to determine how accurately the cylinders are being machined in several engine blocks. The design specification calls for a cylinder diameter of 3.5 inches (1 in = 25.4mm), with a tolerance of ± 0.005 inches.

To determine the accuracy of the cylinders, several engine blocks were taken from the assembly line during manufacture and one cylinder was measured in each block.

Enter the following data in an Excel worksheet, putting the first diameter value of 3.502 in cell B4.

SAMPLE	DIAMETER	
1	3.502	
2	3.497	Mean =
3	3.495	
4	3.500	Median =
5	3.496	
6	3.504	Mode =
7	3.509	
8	3.497	Min =
9	3.502	
10	3.507	Max =
11	3.497	

12	3.504	Std Dev =
13	3.498	
14	3.499	
15	3.501	
16	3.500	
17	3.503	
18	3.494	
19	3.499	
20	3.508	

Analyze the data by calculating the mean, median, mode, min, max , and standard deviation.

Enter the required parameters in column D as it is shown in the table above. Use the Excel functions for the calculation. If you don't manage on your own, then this is how you can get the parameters:

Move to E4; Click fx Insert Function button; Select the function AVERAGE; Click OK; Select the function Argument to be the range B4:B23; Click; OK; The average of the cylinder diameters is calculated and displayed in cell E5

Similarly you can obtain the other five values:

9.4 Construct a histogram

A histogram is a relative frequency plot. From the relative frequency plot we can obtain a plot of the cumulative distribution.

To create a histogram, you must first subdivide the range of the data into a series of adjacent, equally spaced intervals. The first interval must begin at or below the smallest data value (the min) and the last interval. The last interval must extend to or beyond the largest data value (max). Each interval will have some lower bound, x_i , and an upper bound, x_{i+1} , where $x_{i+1} = x_i + \Delta x$ and Δx represents the fixed interval width. The intervals are called **bins** in Excel. **As a rule, 10-15 intervals works for most data sets.** Once the intervals have been defined, you must determine how many data values fall within each interval. The **relative frequencies** are then obtained as $f_i = \frac{n_i}{n}$, where f_i represents the relative frequency for the i th interval and n represents the total number of data values. If k

is the number of intervals, then $\sum_{i=1}^k n_i = n$ and $\sum_{i=1}^k f_i = 1$. The histogram is usually

expressed as a bar graph showing the values of the interval counts (n_i) or the relative frequencies (f_i). From this bar graph, it is easy to see how data are distributed.

In excel, histograms can be constructed very easily using the Histogram feature found in the analysis ToolPack. To install the Analysis ToolPack, choose Tools/Add-Ins dialog box.

Activity 9.4

Construct a histogram of the data given in the previous exercise


Choose 10 equally spaced intervals ranging from $x = 3.490$ to $x = 3.510$ inches. **If the data falls on an interval boundary, assign the data value to the lower interval.** (NOTE: This boundary rule is arbitrary. Many authors suggest that data value falling on an interval boundary be assigned to the upper interval. However, the choice of the lower interval is consistent with the rule employed in Excel)

Therefore, the interval ranges are

3.490 - 3.492
3.492 - 3.494
3.494 - 3.496
3.496 - 3.498
3.498 - 3.500
3.500 - 3.502
3.502 - 3.504
3.504 - 3.506
3.506 - 3.508
3.508 - 3.510

(A value of exactly 3.492 will be assigned to the first interval.)

You need Analysis Tool Pack in Excel to draw the histogram. You can install the Analysis Tool Pack as follows:

1. Click the **Microsoft Office Button** , and then click **Excel Options**.
2. Click **Add-Ins**, Select **Analysis Tool PACK**
3. And then in the **Manage** box, select **Excel Add-ins**.

4. Click **Go**.

The installation of the Analysis Tool Pack begins automatically

We can now proceed with the histogram

*In cell G3 type **Bounds**; Enter the right interval bounds in Cell G4 through G13;*

*Data → Analysis → Data Analysis → Select **Histogram** from the list of items.*

*In the histogram dialog box select the Input Range (the cell block that contain the diameter data) by dragging the mouse pointer over B4 through B23; Notice that absolute reference will appear (\$B\$4:\$B\$23); SELECT THE Bin Range (The interval upper bounds) by dragging the mouse pointer over G4 through G13 (\$G\$4:\$G\$13); Select the output range by dragging the mouse pointer through cells I4 to I13. Click **OK***

The following table is displayed as a result:

<i>Bin</i>	<i>Frequency</i>
3.492	0
3.494	1
3.496	2
3.498	4
3.5	4
3.502	3
3.504	3
3.506	0
3.508	2
3.51	1
More	0

A histogram is customarily plotted as a bar graph (called Column Chart in Excel). This can be carried out manually, using the techniques describes earlier, or it can be carried out automatically when the histogram is created. To create the chart automatically, simply select Chart Output at the bottom of the Histogram dialog box.

Activity 9.5

Select the Bin and Frequency data by dragging the mouse over I3 through G14; Select Tools/Data Analysis/ Histogram;

In the Histogram Dialog box select Chart Output; Click OK;

The Histogram will be inserted on the worksheet;

Edit the chart: Title Font 10, very other fonts 8; Plot Area white;

The resulting histogram will look like figure 7

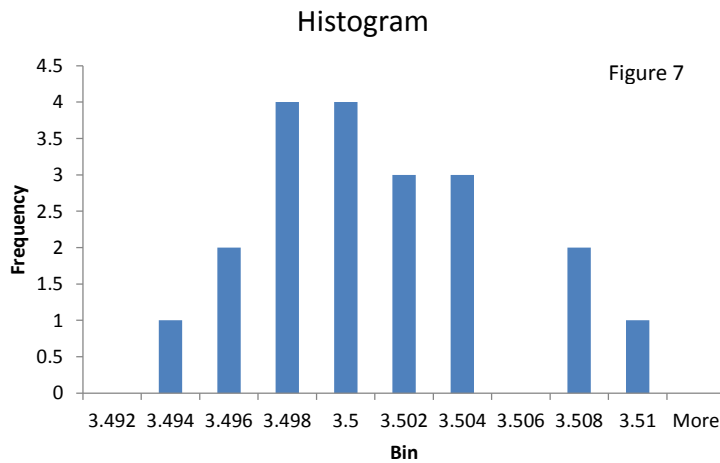


Figure 7 differs from a traditional histogram in two ways. First, the numerical values shown beneath the interval (bin) actually correspond to the interval **right boundaries** which are shown as tick marks

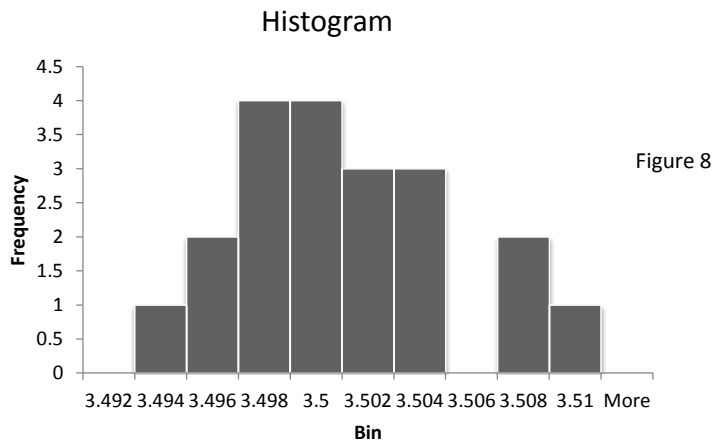
The other difference concerns the manner in which the vertical bars are drawn. Since the **vertical bars** represent continuous intervals, they **should be drawn adjacent to each other**, without any intervening space.

Activity 9.6

Click on one of the bars to select the data set represented as a column chart: Right click with the mouse; Select Format Data Series; The Format Data Series dialog box appears;

Select Series Options; Under Gap Width, set the Gap width to 0% and close the dialog box.

The results is shown in Figure 8



9.5 Cumulative Distribution

In Excel, the cumulative distribution can be obtained at the same time the histogram is generated. To do so, simply select Cumulative Percentage in the Histogram dialog box

Activity 9.7

Select the data for the histogram again (Cell I4 through J14); Select Data → Analysis → Data Analysis → Select **Histogram** from the list of item the Histogram dialog box select the Cumulative Percentage; Click OK;

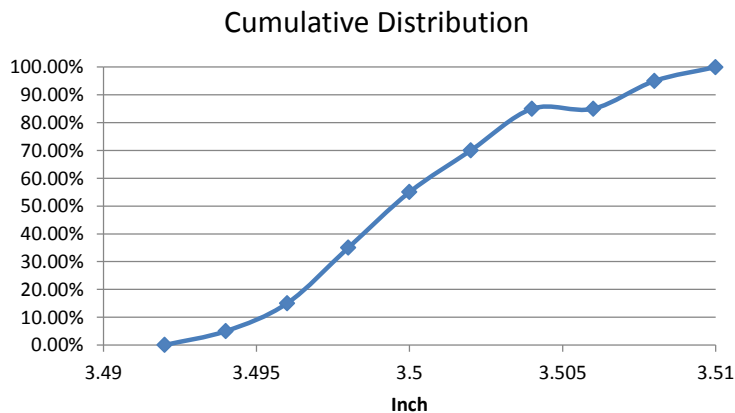
A third column with the cumulative percentage values will be added to the Frequency column and the chart will be drawn having both the histogram and the cumulative distribution curve shown;

Edit the chart as before to have touching columns;

There is still a problem associated with the chart. The graph of the cumulative percentages connects points drawn at the **center** of the intervals, whereas **we would prefer to draw the graph from the right interval boundaries**. The only way to correct this problem is to plot the cumulative distribution as a separate XY (Scatter) graph.

Activity 9.8

Plot the cumulative distribution curve as a separate graph. Work on your own. The result should look like figure 9



The information obtained from the graph would probably be more accurate if a smooth curve were drawn through the aggregate of the data points assuming that a larger number of data points would result in a smoother and more accurate graph). This can always be done by hand. However, Excel can also pass a smooth curve (a **trendline**) through a set of data.

Activity 9.9

Select the distribution curve; Select Chart/Add Trendline;

In the Add Trendline dialog box select the Type/Polynomial; the Order should be 6; Click OK .

The trendline is added to the graph;

9.6 Tips and Advices

- ✚ **Always show the data points (markers)** on engineering graphs.
- ✚ The default chart setting Excel has a dark gray plot area colour. It is not only ugly, but often distribution in black and white printing and Power point presentations. Therefore, **always change the plot area colour to white.**
- ✚ If there is only one curve on the graph, you don't need a legend.
- ✚ The default setting of Excel always puts the charts title above the chart. However, in engineering and science we always **put a figure's title under the figure!**
- ✚ Resizing the chart area automatically changes the font size of every figure and letter on the chart axes and title. To prevent this, in the Format Chart Title, Format Axis, Title dialog boxes **deselect the Auto Scale Check box.**
- ✚ If you need your graph or chart created in Excel in a word Document, Copy the chart in Excel and use Edit/Paste Special in word. Select the Paste Link in the dialog box. This way you can edit your graph in word as well

CHAPTER 10: SHARING DATA BETWEEN APPLICATIONS

The applications (Microsoft Word, Excel, and Power point) have a common user interface such as similar commands and menu structures. In addition, they have been designed to work together, making it easy to share and exchange information between applications.

Information that is copied as an embedded object to a file created by different applications becomes part of the file and can be updated using the application from within the document in which it is inserted.

10.1 Copy between applications

Activity 10.1

Select and copy the contents of cells B2 through F10 of the table titled ' ' THE SPORTS COMPANY Sales by Sport ' ' in Excel; Open word and paste the content of the clipboard on a new blanks document; Select the entire table; Click the center button on the Formatting toolbar.

10.2 Linking an Object to another application

Information that is copied from one file to another as a **linked object** maintains a connection between the two files, allowing the linked object to automatically update when the **source file** changes. When an object is linked, the data is stored in the source file (the document it was created in). A graphic representation or picture of the data is displayed in the **destination file** (the document in which the object is inserted). When changes are made in the source file that affected the linked object, the changes are automatically reflected in the destination file when it is opened. This is called a **live link**.

To create a linked object:

- ✚ Select chart area in Excel and copy it to the clipboard. Switch to word; Choose Edit/Paste Special on the menu bar. In the Paste special dialog box, Select Paste Link. Click OK

The chart object is displayed at the location of the insertion point aligned with the left margin

Activity: Copy ‘‘ The Sport Company Sales’’ chart to a word document as a linked object.

10.3 Update a linked object

Double-clicking on a linked object quickly switches to the open source file. If the source file is not open, it opens the file for you. If the application is not loaded, it will both load the application and open the source file.

ACTIVITY

You decided to change the chart type you have just pasted into Word to a line chart. Double-click the chart object; Click the chart Type button on the Chart toolbar; Click the line Chart; Adjust the placement of the text box and arrows.

10.4 Embedding an object in another application

An object that is embedded is stored in the destination file and becomes part of the document. This makes a document containing an embedded object much larger than a document containing the same object using linking.

If the user has access to the application that created the embedded document, called the server, the embedded object can be edited or updated from within the destination document. Double-clicking on an embedded object starts the server application within the destination document. Any changes you make to the embedded object are not reflected in the original source file, however.

10.5 Object linking and embedding, or OLE, is the program-integration technology that makes it possible to share data between applications.

To create an embedded object:

- ✚ Copy a range in Excel and switch to Word. Choose Edit/Paste Special. In the Paste Special dialog box, select PASTE (This is the preselected option). The entire worksheet selection is displayed in other application at the location of the insertion point.

When an object is embedded, the entire selection is pasted and displayed in the destination document as a single object.

Activity 10.2

Switch to Excel and make your Projected sheet active; Copy the range A1 through I20; switch to Word; Choose Edit/Paste Special; Select Paste and Select Microsoft Excel Worksheet object; Click OK

The entire worksheet selection including the chart and the table is displayed in word document

If you linked this selection, only the worksheet data would appear and be linked in the destination. The chart would not be included in the link. To Link the chart, you need to select the chart object separately and establish a separate link and a separate object.

10.6 Update an embedded object

The server application is used to edit data in an embedded object. To open the server application (in this case Excel), simply double click on the embedded object. The Excel menus and toolbars replace some of the menus and toolbars in the Word application window. Now you can use the server commands to edit the object.

Activity 10.3

To demonstrate how an embedded object works, close the source file and application (Excel). Double-Click the embedded object; Reduce the tennis projection value to 48,000 and increase the golf projection to 200,000; After editing is complete, close the server application by clicking anywhere outside the object. The chart is updated to reflect the changes in data. The new projection has decreased the tennis contribution to 6% and increased the golf to 25%. The original Excel file has not been affected by these changes

CHAPTER 11: STYLES

Although styles are important, you still could get away with never using them. However, you would do so at the expense of efficiency and consistency. Styles are collections of characters and paragraph formatting commands that provide the following advantages.

- Style makes it unnecessary to perform repetitive formatting procedures, reducing the amount of time it takes to create documents.
- Styles help ensure that your documents are formatted consistently.
- When you modify a style that has been used repeatedly in a document, any text that conforms to the styles is also updated.

Word has a number of built-on-styles. In addition, you can create your own styles. Styles are either stored in the current document or in a document template. A template includes styles in addition to standard text and graphics, and helps eliminate the need to perform repetitive typing and procedures.

The **normal template** is opened by default when you click the New Blank Document button on the Standard Toolbar. If you click the down arrow on the style button in the formatting Tool bar, you will see a list of additional styles that are available in the normal template.

Styles can be of 2 types: character and paragraph. The paragraph styles are indicated by the mark (¶) that appears to the right of its name. A **character style** is indicated by the 'a' that appears to the right of its name. A character style can contain character formatting but not paragraph formatting. **Paragraph formatting** can contain both character and paragraph formatting, such as alignment, indentation and line spacing instructions

- Use the style button on the formatting toolbar to transform a document. Before applying a style, you must either position the insertion point in a paragraph or select multiple paragraphs.
- To see the formatting contained in a particular style in a document. You can use the What's this? Option on the Help menu.
- To display the complete list of styles that are available in the Normal template, hold down the SHIFT key while clicking the Style button.

Activity 11.1

Type the following shot test to practice formatting with style

THE BALTIC STATES & RUSSIA

FRIDAY, AUGUST 1
Depart Ghana Kotoka international Airport on a KLM flight to Amsterdam. Beverage, dinner, and breakfast will be served your overnight flight, which will arrive early morning to Amsterdam.

SATURDAY AUGUST 2
Soon after arrival in Amsterdam, you board another KLM flight to Helsinki. Beverage and snack will be served on the flight which will arrive around noon in Helsinki. Meet your local guide, board a bus for a short sightseeing tour of Helsinki, and then check into your hotel, located in the heart of the city. The remainder of the day is open.

SUNDAY; AUGUST 3
Transfer to the airport to a short flight to Vilnius, capital of Lithuania. Upon arrival, meet your Baltic States guide. Transfer to the hotel where lunch will be served. Then begin sightseeing in this medieval city. After Lunch, enjoy an excursion to Trakai, former capital of the Grand Duchy of Lithuania.

MONDAY, AUGUST 4
After breakfast, continue sightseeing in Vilnius by walking in Old Town

TUESDAY, August 5
Following breakfast, board your bus for an interesting 250 km drive to Riga capital of Latvia.
And so on....

First apply a style to the main heading:

Clicking in the headings; Click down arrow on the style button; Choose Heading 1

(Because the Heading 1 STYLE IS A PARAGRAPH STYLE, the entire paragraph was formatted. That is, you didn't need to select the entire heading before applying the style.)

To format the first subheading:

Click in the 'FRIDAY, AUGUST 1' heading ... Choose Heading 2 style. Format the rest of the subheadings

11.1 Create and redefining styles

- To create a style, begin by formatting a paragraph in your document with all the formatting you want the new style to contain. Then, with the cursor in the paragraph, click “Save Selection as a Quick New Style” in the styles dropdown list, type a new name and press ENTER.
- To define a style **with the formatting toolbar** you must select a paragraph that is currently formatted with the style you want to modify. Modify the selection as you want it to look. To redefine the paragraph style, choose the style from the style drop-down menu and select update the style to reflect recent changes. Options (READ ‘redefine style’ under Help if you use Word XP)
- To redefine a style right click the style you want to modify in the Style list, click the Modify button, click the Format button, use the options on the Format menu to edit the style and then press ENTER or click OK. To exit the Modify Style dialog box press ENTER or Click OK. To exit the style dialog box click Close.
- To limit the number of styles that appear in the styles list box, ensure that “ Styles in use” appears in the List drop-down list box
- Read the topics under Style in the Help Menu

Activity 11.2a

Create a new style that you will use for the subheading:

*Position the insertion point to the right of the main title and Press ENTER; create a subheading by typing “**Itinerary prepared by: your name**”; Select this new subheading; Choose Arial from the Font drop-down list; Click Bold button on the Formatting toolbar; Click on the name portion of the style button; type ‘**Subheading**’; Press ENTER*

The subheading style was added to the style list

Modify the Heading 2 style so that it does not include the italic or bold attribute (for word 2000)

Select Heading 2 from the style drop-down menu. The Modify dialog box appears. To update the Heading 2 Style, ensure that the Update the style....option is selected, and then press ENTER or CLICK ok. The heading 2 style for this document is no longer includes italic or bold formatting. (To reapply the Original style to the current selection, you would select the Reapply the formatting....option).

Activity 11.2b

Edit Heading 1 style to include a larger point size, expand font spacing, borders, and shading. Choose Format/Style; select Heading 1 in the styles list;

To modify the selected style:
Click Modify button (the modify style dialog box appears); Click Format button (using the Format menu you can change any formatting aspect of the selected text);

To increase the point size
Choose Font; Click Font tab; Choose 16 in Size in the list box;

To Increase the space that appears between characters:
Click characters Spacing tab; Click up arrow in the Spacing By spin box until 2pt (not.2 pt) appears ; Click OK (the Modify Style dialog box appears in the description area)

To center the heading:
Click Format; Choose paragraph; Click indents and spacing tab; Select Centered from the Alignment drop-down list; Click OK

To apply a border with a 1-point line width, with lines at the top and bottom, and shading:
Click Format button; Choose Borders tab; Choose 1 pt from the Width drop-down list; Click Top and Bottom button in the preview area; Click shading tab; Choose 15% from the style drop down list; Click OK

(At this point, unless you check the add to template check box, the edited Heading 1 style will only be available in this document. To make this style available to other documents that use the Normal template, you need to add it to the Normal Template by selecting the Add to template check box(do this step only on your own computer!) Click OK

To change the Subheading style to include centered attribute:
Select Subheadding in the style list box; Click Modify button; Click Format button; Choose Paragraph; Choose Centered from the alignment drop-down list; Click OK

To change the point Size stored in the Normal style (if Font 10 is the default setting):

Select Normal in the style list box; Click Modify button; Click Format button; Choose Font tab; Choose 12 in the size list box; Click OK

11.2 Copying styles among documents (Optional)

Another advantage to using styles is that you can copy them among documents and templates. That is, once you create a style that you like, you never have to create it again

To copy a style to the Current Document, Choose Format/Style AND THEN CLICK THE Organizer button. Click Close File button located below the list box on the right. Click Open File button located below the list on the right. Select (by double-clicking) the document or template that contains the style you want to copy. Select the style(s) you want to copy in the list box on the right. Click copy button in the Organizer dialog box. Click Close button to return to your document.

Activity 11.3

Copy the styles you have just created into a new document.

Click the New button ☐ to display an empty document. This new document is by default based on the Normal template. You will copy a few styles into this document:

Choose Format/Style; Click Organizer (the list box on the left shows the styles available in your new document. The list box on the right shows the styles that are available in the Normal template.

At this point the 2 list boxes are identical because the new document is currently based on Normal Template; Click file button located below the list on the right; Click Open File button on the right (the Open dialog box is now listing the contents of the Template folder; Since you want to open a document, you need to select 'Word documents' in the files of type drop-down list box; Click the down arrow in the Look in drop down list box; select your 'schedule' file you have just saved.

To copy the Heading 1 style from the list box on the right to the list box on the left: Select Heading 1 in the list box; on the right; Click copy button located in the organizer dialog box; Click Close button to return to your new document.

To illustrate that **HEADING 1** style was copied into the current document: Choose **Heading 1** from the **Style** drop-down menu; Type something to see this style the down arrow in the look in drop-down list box; Select


Comment [s2]: Review 2

11.3 The importance of templates (optional)

If you find that you create the same type of document frequently, such as a letter report or resume, you can benefit from creating a template. A template may contain text, graphics, direct formatting, styles, and other elements that can be used in each future version of the document. Whereas styles are stored in a document, templates are stored as files. Words templates have the extensions of DOT and are stored by default in the Template folder beneath the word folder. All word documents are based on templates, even the empty document you see after clicking the New button. Document wizards can help speed the process of creating a new document. You access a wizard or template through the New Office Document option on the **Microsoft Office Button**. By clicking *File Button* then *New*. On the **template** menu lists you can select any template of your choice

Agendas
Award certificates
Brochures
Calendars
Faxes
Forms
Letters
Invoices
Invitations
Labels
Greeting cards
Business cards
Planners
Purchase orders
Postcards

11.4 Saving a document as a template (optional)

To create a template from an existing document, you should first edit the document to remove any information or formatting that will need to change over time then simply choose the **File Button**  and Select **Save AS**. In the Save as Type drop down list select **word template**.

Activity 11.4

Save the table to track your monthly expenses as document template:

Open the table; select the data in the last column (not the heading and not the total figure!);

Delete the selected data; To recalculate the total amount press F9; Delete April, 2003 from the first column, split the column into 2 horizontally and leave the blank portion for the date; Save the document as a template on your Pendrive

To launch the template you have just created

Clicking File, Select **Open**, **Double click the template you just created on your pendrive.**

11.5 Modifying a template

Clicking File, Select **Open**, **Double click the** template you want to modify. Edit the template as you would a normal document and save the template back to the pen drive.

To create a new template from an existing one follow the steps above but save the template you have created with a new name.

CHAPTER 12: WORKING WITH LONG DOCUMENTS

What is a long document? Your 'long document' might be someone else's short document. For now, let's define long document as one that contains at least 10-20 pages (e.g. lab reports, project reports, assignments...)

As you work with long documents, remember that using the Select Browse Object button on the vertical scroll bar can keep your scrolling bar to a minimum. When you click this button, a menu of objects will appear. Select the type of object you want to browse, and then use the Next and Previous buttons to move the cursor to the next or previous object of your chosen type. (Read in the Help topics: Move around in a document)

12.1 Outline overview (optional)

Outline view can be a great help when you are:

- Writing reports
- Organizing your thoughts
- Editing a document or
- Editing a document someone else has created

By enabling you to **collapse** (to hide body text and subheadings under headings) a document so that just the main headings appears, this collapse view also provides an excellent editing tool. The outline toolbar automatically appears in Outline view.

To view in outline

- Choose View/Outline from the menu bar or
- Click the Outline View button at the Right side of the horizontal scroll bar.

(Read in the Help topics: About viewing a document as an outline and Text Formatting in outline view).

What you can see in outline view depends on how the document is formatted. Headings must be formatted with heading styles. You can apply these styles to your headings as usual (when typing the document or later at editing). Or, in outline view, you can automatically apply styles by dragging the headings to the appropriate levels)

To select in Outline View

- A heading and all of its subheading; Click the plus(+) icon next to the heading
- A heading and no sub-levels. Points to the selection bar (to the left of heading) and click

- A paragraph of body text: Click the bullet symbol next to the paragraph or click to the left of the paragraph in the selection bar
- Multiple headings and subheadings. Drag with the mouse through the selection bar

To restructure your work

You change the level of a heading by first selecting it and then clicking the Promote (←) or Demote (→) buttons on the Outline toolbar

You move sections by first selecting it and either dragging it up or down in the outline to the new location or clicking the Move Up (↑) or Move Down (↓) buttons on the Outline toolbar

You can move entire sections, including subheadings and body text this way

Activity 12.1

Bring a document, which contains headings and subheadings. Format the headings with style. Then practice above operations to edit your document in Outline view.

12.2 Creating a table of contents

A table of contents is a standard component of long documents. You can create a table of content in several ways.

- If the headings in your document have been formatted with heading styles (Heading 1,...), you position the cursor where you want the table of contents to appear and choose Insert/Index and Tables from the menu bar (in window xp Insert/Reference/Index and Tables...). Then in the Table of contents tab choose a format for the table and Click OK

If heading are not formatted with heading styles:

- Format them or
- Mark the entries you want in the table of contents yourself (see help)

You format the table of contents before inserting it in the Index and Table dialog box.

Once the table of contents has been inserted, you can format it as you would format normal text. In this case, if you later update the table however, your formatting is lost. A better approach is to edit the TOC style that Word used to generate the table (Insert/Index and

Table), choose in the Formats list box the from template option and then click the Modify button)

If you perform extensive editing in your document, the page numbers of your table will likely get thrown off. Fortunately, a table of contents is inserted as a field that you can easily update or replace.

To update the table of contents

- Right-Click anywhere in the table and then choose Update Field From the shortcut menu or
- Right- Click anywhere in the table and press F9

12.3 Protecting your work

There are several procedures you can perform to protect your documents so that they cannot be altered or opened by unauthorized users.

To assign password to a file

Choose File/Save As and then click Tools/General Options... Type a password into the password to open text box and then click OK. You will then be prompted to reenter the password. In this case, only people who know the password can open the file.

Passwords are case-sensitive. They can be up to 15 characters and contain any combination of letters, numbers, spaces, and symbols. It is recommended to use easy to remember passwords. Keep a record of your passwords in a safe location

PAST PRACTICAL EXAM QUESTIONS

Each set of questions has to be solved in 30 minutes

EXAM1

The per capita Gross Domestic Products (GDP) in US dollar (USD) was as follows in West-Africa countries in 2003

Country	USD
Benin	450
Burkina Faso	270
Cape Verde	1650
Ivory Coast	700
Gambia	250
Ghana	340
Guinea	360
Liberia	170
Mali	280
Nigeria	340
Sierra Leone	170
Senegal	590
Togo	290

- (a) Enter the data on an Excel Sheet
- (b) Sort the data so that the country with the highest GDP will be at the bottom of the table
- (c) Apply an AutoFormat Border to your table
- (d) Plot a Clustered bar chart
- (e) Your graph is expected to have the following format

Title of the chart: GDP in West African countries in 2003

Title on the X-axis: GDP.USD

On the X-axis the countries are listed, there is no need for a title there

Title below the chart

No legend; No gridlines, shadows for the bars, No borders for the plot area

Data labels to show GDP values for each bar

Colors: Both Chart Area and Plot Area light yellow, Bars red,

Font: All Ariel, size 8

- (f) Center your table and your chart on the page both horizontally and vertically
- (g) Save your work in the folder CHE 4 created on Drive C under a file name bearing your full name in the following format or **SURNAME**, other names and **your** index number

EXAM 2

Problem 1

(a) Set the page margins to be 2.5 cm (Left, Right, Top, Bottom)

(b) Copy the following table and table title

Indicator	pH range	Color in acid solution	Color in alkaline solution	pK _{in}
Methyl Orange	3.1–4.4	Red	Orange	3.7
Bromo-thymol blue	6.0–7.6	Yellow	Blue	7.1
Phenol-phthalein	8.3–10.0	Colorless	Red	9.6
Thymol-phatalein	9.4–10.6	Colorless	Blue	-

(c) Format the table such that at the end it would look like the one you were just copying:

Center the column headings in columns 2-4 and make all headings bold

Align cells 1, 2, and 5 in the heading

Set the column width by Autofit to contents

Apply borders 1¹/₂ point wide where you need them and remove all other borders.

Center the table on the table on the page horizontally

Problem 2

Type the following equation

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C$$

1. Change the font size of the symbol \int from the default size 18 to 25
2. Insert your equations under the table you have just edited
3. Center your equations on the page
4. Put a red line 1.5 point wide around the first equation
5. Save your work in the folder ChE 158 created on Drive C under a file name bearing your full name in the following format or *SURNAME, other names and your index number*

EXAM3

The following table gives the gravitational acceleration at various latitudes at sea level

LATITUDE	G, M/S ²
0	0.978039
10	0.978195
20	0.978641
30	0.979329
40	0.980171
50	0.981071
60	0.981918
70	0.982608
80	0.983059
90	0.983217

- Enter the data in an Excel Worksheet
- Bold all alphabetic characters
- Center both columns
- Edit column widths and apply suitable borders that will make the data look like a table
- Plot a scatter chart with data points connected by a smooth line
- Your graph is expected to have the following format
 - Title of chart: Dependence of gravitational acceleration from latitude
 - Title should be below the chart
 - Title on the Y axis: g/m^2
 - Title on the X-axis: Latitude, °
 - Y-axis scale from 0.976 to 0.984, the major unit should be 0.001
 - X-axis from 0 to 90, the major unit should be 10
 - Colors: chart Area and Plot Area white, the line on the graph and the markers red
 - No legend
 - Font: All Ariel, Size 8
- Save your work in the folder CHE 4 created on Drive C under a file name bearing your **full name** in the following format or ***SURNAME, other names and your index number***

EXAM 4

The largest ethnic groups and their proportion within the population in Nigeria are as follows:

Ethnic group	Population, %
Hausa-Fulani	29
Yoruba	21
Ibo	18
Ijay	10
Kanuri	4
Ibibio	3
Tiv	2

- Enter the data in Excel Worksheet
- Calculate the proportion of the rest of the ethnic groups (Others)
- If the total population of Nigeria stands at 126.6million, calculate the population of the different ethnic groups in the third column with 1 decimal accuracy
- Add a 'Total' row at the bottom of the table
- Bold all alphabetic characters
- Center 2nd and 3rd column
- Edit column widths and apply an Autoformat borders
- Plot a pie chart of the population in million people
- Your graph is expected to have the following format
Title of the chart: Nigeria's population
Title should be at the bottom of the chart
Add data labels with the name of the Ethnic group and the population figure
No legend, since the chart has data labels
No borders
Font: Ariel , size 8
- Save your work in the folder ChE 158 created on Drive C under a file name bearing your **full name** in the following format or ***SURNAME, other names and your index number***

EXAM 5

Draw the binary phase equilibrium diagram for n-heptane-n-octane system at atmospheric pressure. The phase diagram shows two curves:

1. The temperature as the function of the vapor(y) mole fraction
2. The temperature as the function of the liquid(x) mole fraction

Data

Temperature °C	X	Y
98.4	1	1
105	0.655	0.81
110	0.487	0.674
115	0.312	0.492
120	0.157	0.279
125.6	0	0

- (h) Enter the data in Excel Worksheet
- (i) Apply suitable borders so your data will look like a table
- (j) Bold the column headings
- (k) Plot a scattered chart with data points connected by smoothed lines
- (l) Your graph is expected to have the following format
 - Title of the chart: n-heptane-n-octane phase diagram
 - Y-axis title: Temperature, °C
 - X-axis title: x,y
 - Y-axis value max 130, min 80, major unit 10
 - X-axis value max 1, min 0, major unit 0.2
 - Legend on the plot area
 - Gridlines: Both Chart Area and Plot Area white
 - Title at the bottom of the chart
 - Colors: Both Chart Area and Plot Area white
 - Title at the bottom of the chart
 - Font: All Ariel, Size 8, except the Title, which is Size 10
- (m) Save your work in the folder CHE 4 created on Drive C under a file name bearing your **full name** in the following format or ***SURNAME, other names and your index number***

EXAM 6

Vapor –Liquid equilibrium data for acetone-water binary mixture at atmospheric pressure are available in literature as follows

X	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Y	0.00	0.16	0.25	0.42	0.51	0.60	0.67	0.72	0.79	0.87	1.00

x and y are the liquid and vapor mole fractions of acetone respectively. You are required to draw the equilibrium diagram (y as a function of x) for the system by Excel. Apart from the equilibrium curve, you have to draw the straight line $y=x$ on the equilibrium diagram as well

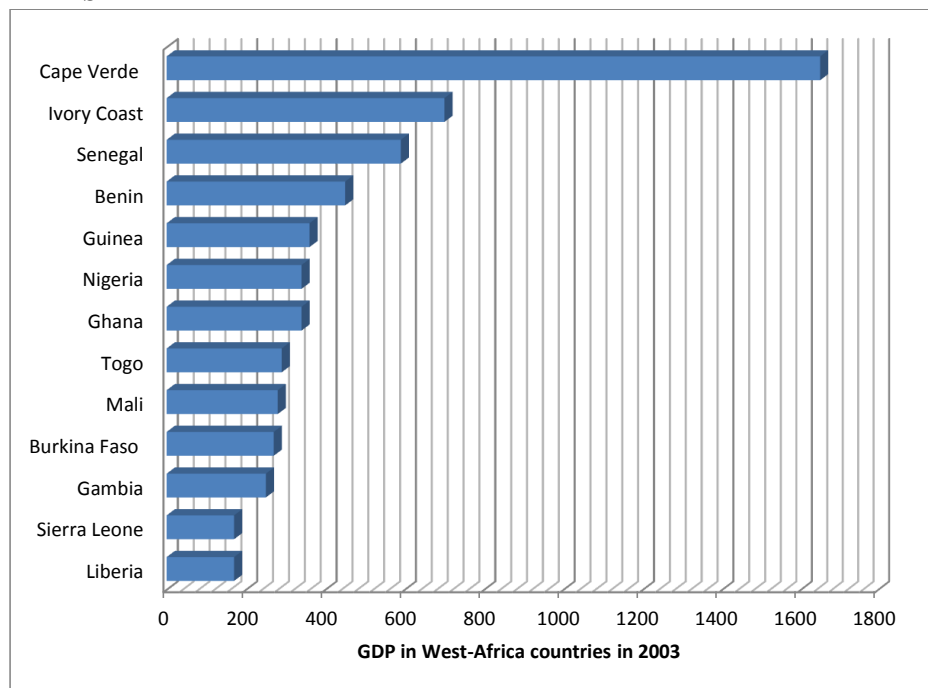
- i. Enter the data in Excel Worksheet
- ii. Bold the column headings
- iii. Center the columns
- iv. Apply suitable borders so that your data will look like a table
- v. Plot a scattered chart with data points connected by smooth emd lines
- vi. Add the $y=x$ line to your chart. This line should not show the markers for the data points
- vii. Your graph is expected to have the following format
Title of chart: Acetone-Water equilibrium curve
Title on the value axis: y
The Y-axis should have 0 degree orientation for alignment (upright letter)
Title on the category axis: x
Both axis should have a value min of 0 and max 1, and show the major gridlines only
Font: All Ariel, Size 8, except the Title, which is Size 10
No legend, chart Area no borders
Your chart should be approximately a square; thus the X and Y axes should have the same length
- viii. Save your work in the folder CHE 4 created pn Drive C under a file name bearing your **full name** in the following format or ***SURNAME, other names and your index number***

SOLUTIONS TO EXAMS PROBLEMS

EXAM 1

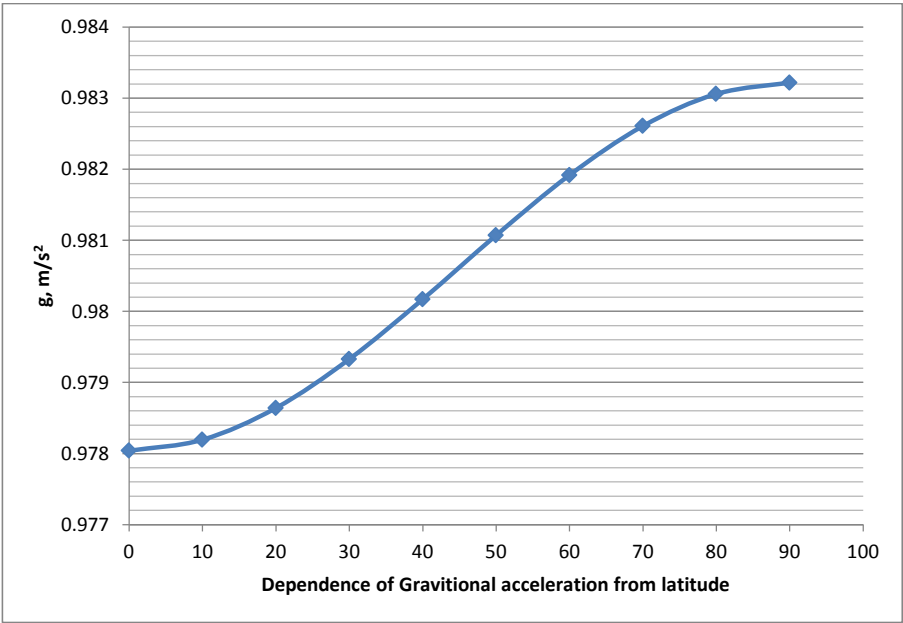
Country	USD
Benin	450
Burkina Faso	270
Cape Verde	1650
Ivory Coast	700
Gambia	250
Ghana	340
Guinea	360
Liberia	170
Mali	280
Nigeria	340
Sierra Leone	170
Senegal	590
Togo	290

EXAMS 2



EXAM 3

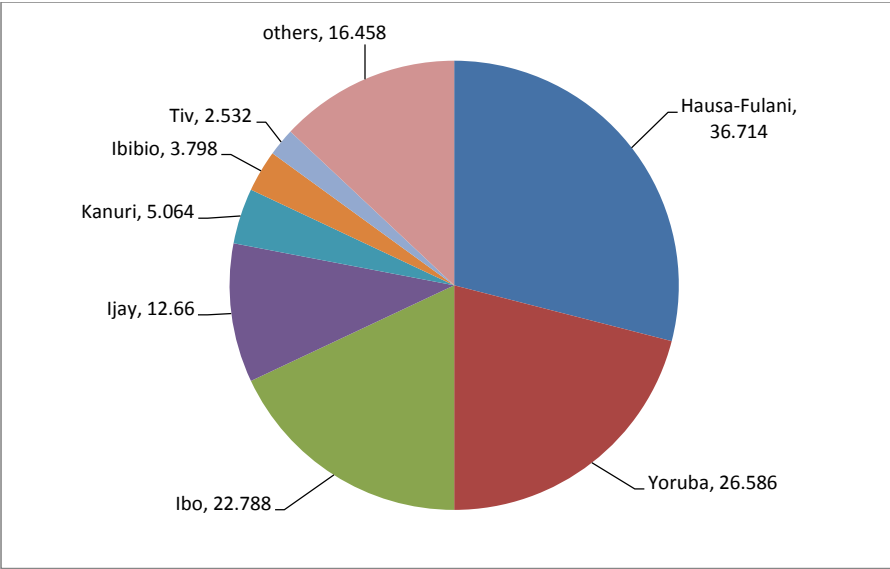
LATITUDE	G, M/S ²
0	0.978039
10	0.978195
20	0.978641
30	0.979329
40	0.980171
50	0.981071
60	0.981918
70	0.982608
80	0.983059
90	0.983217



EXAM 4

Ethnic group	Population, %	Population, million
Hausa-Fulani	29	36.7
Yoruba	21	26.6
Ibo	18	22.8
Ijay	10	12.7
Kanuri	4	5.06
Ibibio	3	3.8
Tiv	2	2.53
Others	13	16.5
Total	100	126.5

EXAMS 5



EXAM 6

Temperature °C	X	Y
98.4	1	1
105	0.655	0.81
110	0.487	0.674
115	0.312	0.492
120	0.157	0.279
125.6	0	0

