Microsoft Excel

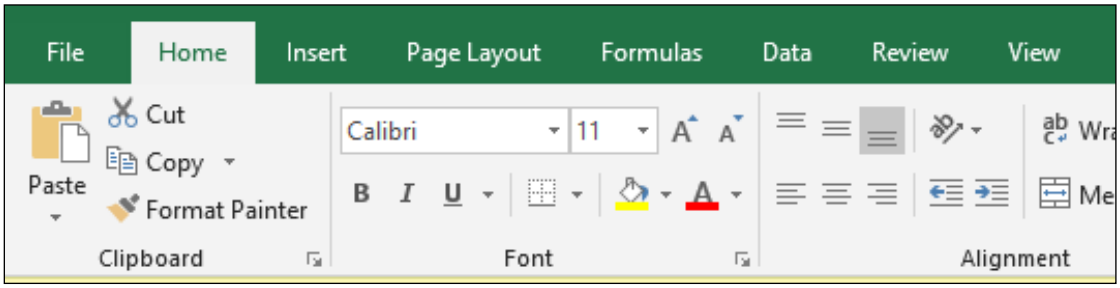
Level 1

Ken Dickinson
Bay Area Computer Training

Table of Contents

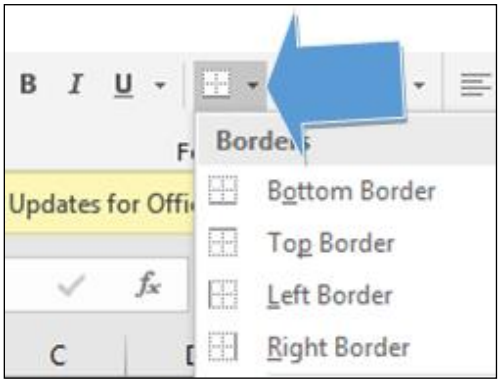
HOW EXCEL IS ORGANIZED

At the top of the Excel screen are **Command Tabs**
Home, Insert, Page Layout, Formulas, Data, Review, View etc.

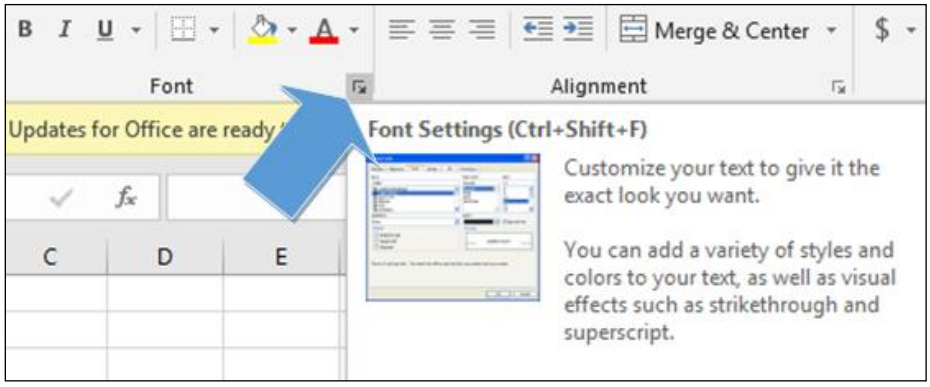


Each Command tab is organized into rectangular blocks with the name of the block at the Bottom, Center, **Clipboard, Font, Alignment, etc.**

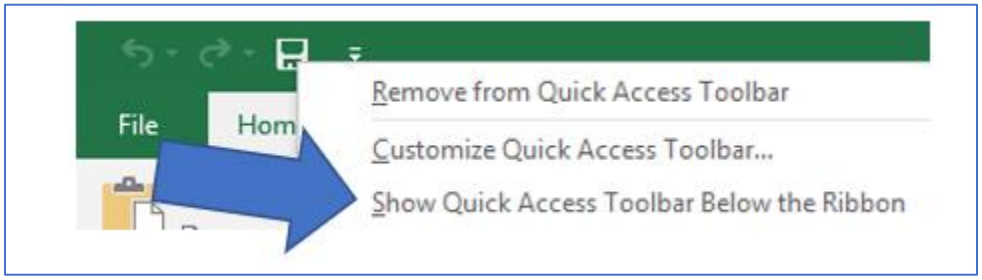
Some of the selections have a **small black triangle** to the right of the selection which give additional choices for example **Borders.**



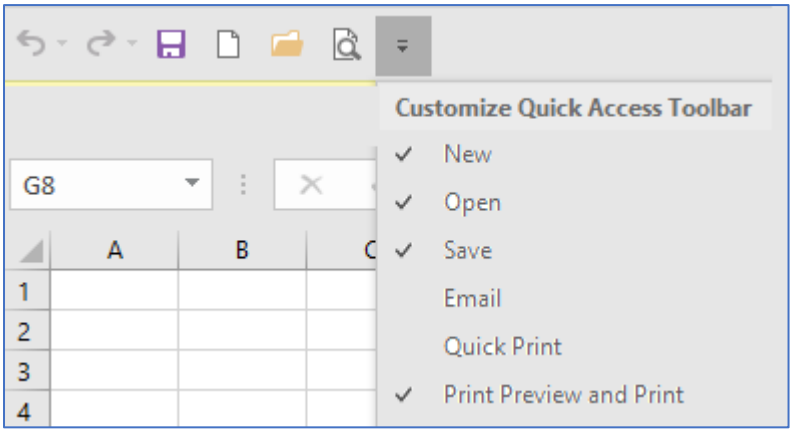
In the bottom right corner of some of the groups is a small **dialog launch arrow** which launches a dialog box with additional choices.



Above the Tabs is the **Quick Access Toolbar**, you can move it below the Tab bar for easier access. **Right click** the Quick Access Toolbar and choose, **Show Quick Access Toolbar below the Riboon**

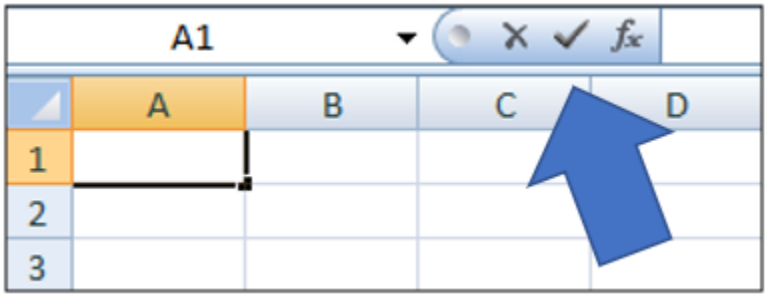


Select the **More Button**  and add in the following choices: **New, Open and Print Preview and Print**



THE FORMULA BAR

The formula bar is where you enter and edit data. The **X** button cancels the last entry, the **Check Mark** records the entry and the **fx** button brings up the function wizard. (**Note: The X, Check Mark and fx buttons are not available until you type something into a cell.)**



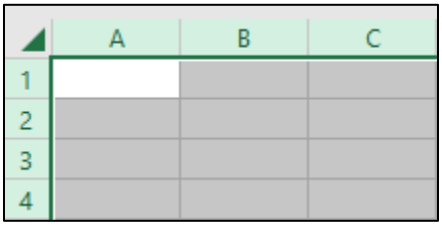
WORKBOOKS

Excel organizes information into **BOOKS**, the default name, at the top of the screen, starts as **Book1** until you save the workbook for the first time

Each book contains **1 Sheet Tab** by default. You can click on the **Plus sign** to the right of sheet tab 1 to add in new sheets.

You can **Rename the sheet by double clicking** on the **Sheet Tab** or by Right Clicking the Sheet Tab and choose Rename

Be careful where you click. Clicking on **A or B or C** selects every **Column** in the sheet. Clicking on **1, 2, 3,** selects every **Row** in the sheet. Clicking on the **Triangle** button to the left of A and above 1 selects every cell in the sheet.



In the bottom right corner of the screen, you can click on the **Plus sign or Minus sign** to **Zoom** in or out of the Spreadsheet

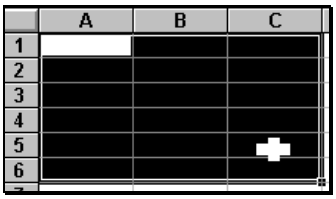
MOVING AROUND THE SHEET

- To reach the last row of the sheet, press the **END key** and then the **DOWN ARROW**
- To reach the last column of the sheet, press the **END key** and then the **RIGHT ARROW**.
- To return to **CELL A1** press **CTRL + HOME**
- Arrow keys move you **left, right, up and down**

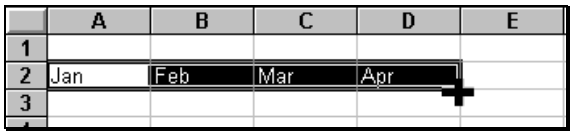
- The **Page Up** and **Page Down** keys move the screen up and down a page.
- The **Home** key, moves the cursor to the first cell of the row you are in.
- The **Tab** key moves you one cell to the right.
- The **Enter** key normally records the cell entry and then moves you down one cell.

PARTS OF A CELL

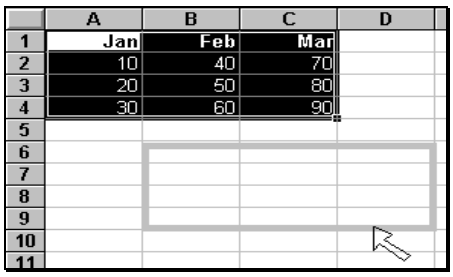
- The **White Cross** (center of cell), is used to block out or highlite cells



- The **Black cross** (bottom right corner of cell) is used to fill cells to the right or down



- The **Arrow** (perimeter of block of cells), is used to drag and drop cells to new locations



LABELS, NUMBERS & FORMULAS

You can enter only **Three** types of information into a **Cell:**

- **Labels (Column or Row Headings and text)**
- **Numbers (Actual values or dates, can do math on them)**
- **Formulas (Always begin with an equals = sign)**

LABELS

- **Step 1**: enter the following labels...

	A	B	C	D	E
1		January	February	March	Total
2	Revenue				
3	Expenses				
4	Income				

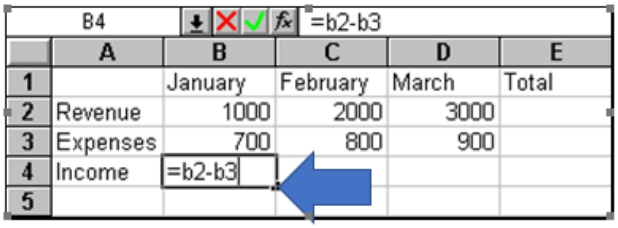
NUMBERS

- **Step 2**: enter the following numbers...

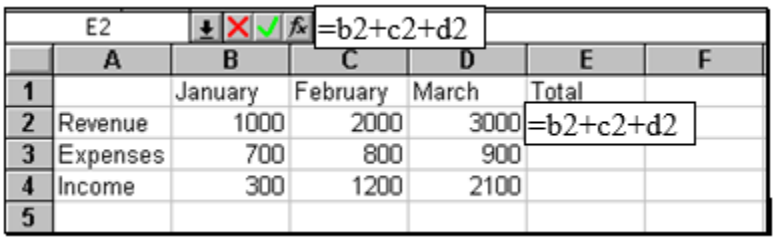
	A	B	C	D	E
1		January	February	March	Total
2	Revenue	1000	2000	3000	
3	Expenses	700	800	900	
4	Income				

FORMULAS

- **Step 3**: enter the formula **"=b2-b3"** in cell B4 and **drag** the **black cross** (bottom right of B4) **to cell D4**

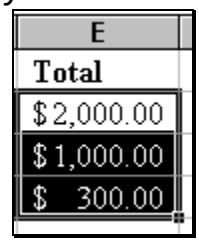


Also Enter the formula "**= b2+c2+d2"** into cell **E2** and **drag** the **black cross** (bottom right of E2) **to cell E4**



DELETING CELL ENTRIES

- To delete cell entries, highlite the cells to be deleted and press th **the delete** key on your keyboard.



E
Total
$2,000.00
$1,000.00
$ 300.00

- Delete the cell entries in cells E2 through E4

THE AUTO SUM BUTTON

- An alternative (and better) way to add up several cells (lists etc.) is to use the **Auto Sum Button** Σ. (*Far right of Home Tab*)

- Move to cell **E2** and click on the **Auto Sum Button**.

B2 =SUM(B2:D2)

	A	B	C	D	E	F
1		January	February	March	Total	
2	Revenue	$1,000.00	$2,000.00	$3,000.00	=SUM(B2:D2)	
3	Expenses	$ 700.00	$ 800.00	$ 900.00		
4	Income	$ 300.00	$1,200.00	$2,100.00		
5						

Notice that the Auto Sum Button captures the numbers directly to the left of cell E2 and places them inside the **SUM function.**

- **Click** on the **Check Mark** or **Press** the **Enter** key to record the entry in cell E2 and then use **the Black Cross** (Bottom Right Corner) to **fill** the Function down through cells E3 and E4.

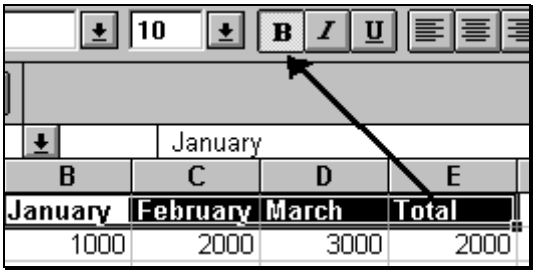
Note: In a "**symmetrical spreadsheet**" problem (each column and row is basically the same), you should only enter two formulas, 1 at the bottom of the first column and one at the end of the first row. Use the black cross to fill the remaining formulas across and down. This is both accurate (they are all wrong or all right) and productive.

FORMATTING – USING THE HOME TAB

- **Step four**: make your sheet look nice by using the various formatting tools which you will find on the **Home Tab:**

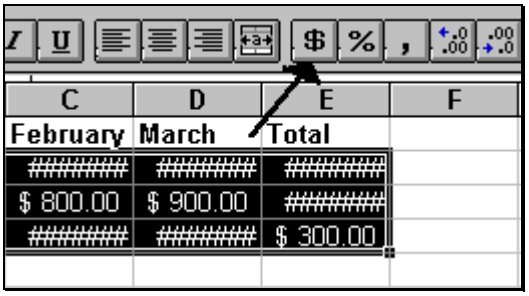
BOLD

- **Highlite** and **bold** the labels



CURRENCY

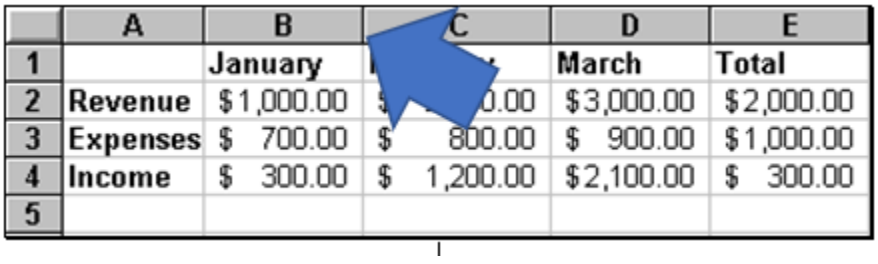
- **Highlite** and Format the numbers for **Currency** ($)



- Notice the ###### signs sometimes appear to indicate the **cell** is **not wide enough** to hold the data.

WIDENING CELLS

- **Press and drag** the **arrow** between **B|C** and **C|D** etc. to widen the cells or simply **Double Click** on the **black line** between B|C, C|D etc to adjust the column width.



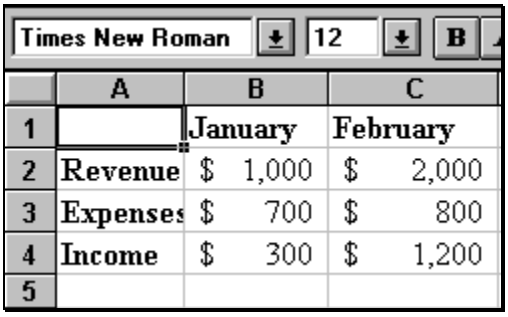
DECIMAL PLACES

- The  buttons **increase** or **decrease** the decimal points
- Highlight all the numbers and decrease the example to **Zero Decimal Places** by clicking twice on the decrease decimal button.

	A	B	C	D	E
1		January	February	March	Total
2	Revenue	$ 1,000	$ 2,000	$ 3,000	$ 6,000
3	Expenses	$ 700	$ 800	$ 900	$ 2,400
4	Income	$ 300	$ 1,200	$ 2,100	$ 3,600

FONT & SIZE

- **Highlight** all the cells and use the **Font List Box** and the **Font Size List Box** to change the font to **Times New Roman, 12 point.**

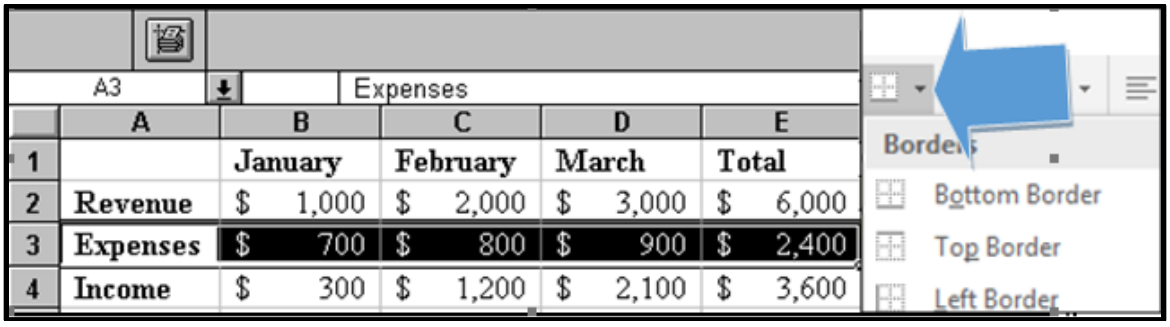


	A	B	C
1		January	February
2	Revenue	$ 1,000	$ 2,000
3	Expenses	$ 700	$ 800
4	Income	$ 300	$ 1,200
5			

- Adjust any column widths that may be too small to display the data by double clicking on the line between **A|B, B|C, C|D** etc.

BORDERS

- Highlight cells A3 through E3 and use the **Borders** button illustrated below to place a border line above the Income row.



	A	B	C	D	E
1		January	February	March	Total
2	Revenue	$ 1,000	$ 2,000	$ 3,000	$ 6,000
3	Expenses	$ 700	$ 800	$ 900	$ 2,400
4	Income	$ 300	$ 1,200	$ 2,100	$ 3,600

REVIEW 1

- Create Sheet 2 and name it **Review**. Create the following spread sheet, using the techniques learned so far.
- Put in the **Labels** first, then the **Numbers** and then the **Formulas** by using **AutoSum** for the **Totals**. Finally **Format.**

	A	B	C	D	E	F	G	H
1		Jan	Feb	Mar	Apr	May	Jun	Total
2	Rent	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$ 7,200
3	Insurance	$ 325	$ 325	$ 325	$ 325	$ 325	$ 325	$ 1,950
4	Postage	$ 120	$ 110	$ 100	$ 105	$ 140	$ 135	$ 710
5	Telephone	$ 300	$ 290	$ 310	$ 305	$ 300	$ 310	$ 1,815
6	Total	**$1,945**	**$1,925**	**$1,935**	**$1,935**	**$1,965**	**$1,970**	**$11,675**
7								

PERCENTAGES

- You can easily convert numbers to **Percentages** by including the **% sign** at the end of the number.
- Calculate a 7.25% Tax on the Total as follows.

5	Telephone	$ 300	$ 290	$ 310	$ 305	$ 300	$ 310	$ 1,815
6	Total	**$1,945**	**$1,925**	**$1,935**	**$1,935**	**$1,965**	**$1,970**	**$11,675**
7								
8	Tax	=B6*7.25%						
9								

- Drag the **Black Cross** (bottom right of cell B8 to extend the Tax through all the columns.

8	Tax	141.013	139.563	140.288	140.288	142.463	142.825	846.4375

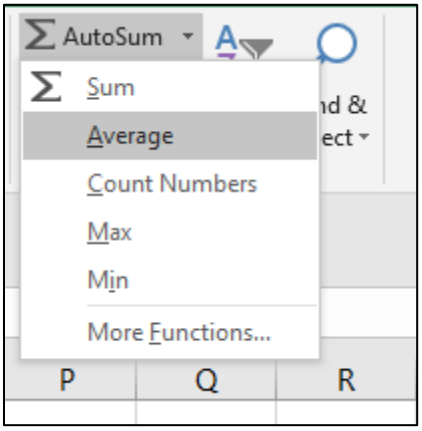
Format the numbers for Currency, Zero Decimal Places. By choosing **Format, Cells, Number, Currency**

REVIEW 2

Create the following spreadsheet using **Labels, Numbers and Formulas**

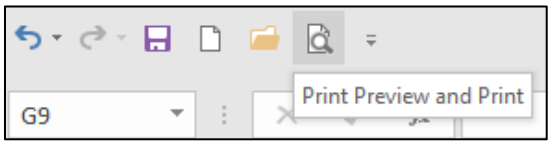
	A	B	C	D	E	F	G
1	**Date**	**Item**	**Cost**	**Quantiy**	**Total**	**Tax 7%**	**Grand Total**
2	01/01/14	Generator	$ 500	1	$ 500	$ 35	$ 535
3	01/10/14	Washing Machine	$ 350	1	$ 350	$ 25	$ 375
4	01/15/14	Dryer	$ 300	1	$ 300	$ 21	$ 321
5	01/18/14	Garden Hose	$ 45	4	$ 180	$ 13	$ 193
6	01/21/14	Fertilizer	$ 25	10	$ 250	$ 18	$ 268
7	1/23/2014	Floor Cleaner	$ 15	10	$ 150	$ 11	$ 161
8	1/27/2014	Brush Head	$ 25	5	$ 125	$ 9	$ 134
9	1/30/2014	Bedding Plants	$ 10	50	$ 500	$ 35	$ 535
10	**Total**		**$ 1,270**	**82**	**$ 2,355**	**$ 165**	**$ 2,520**
11							
12							
13							
14							
15							
16	Average		$ 159	10.25	$ 294	$ 21	$ 315
17	Max		$ 500	50	$ 500	$ 35	$ 535
18	Min		$ 10	1	$ 125	$ 9	$ 134
19	Count		8	8	8	8	8

Use the Statistical Functions **Average, Max, Min and Count** from the **AutoSum Drop downlist** on the **Home Tab**



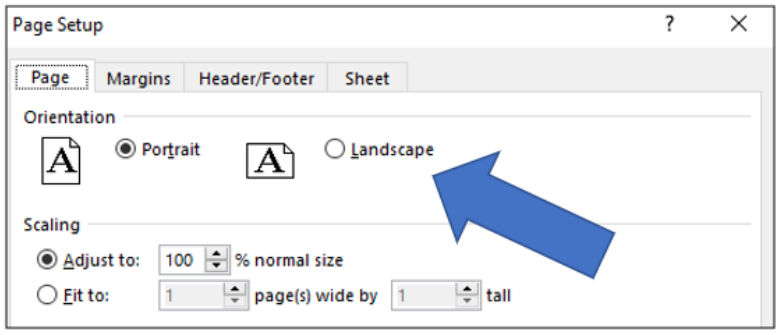
PRINTING

- Choose the **File Tab, Print, Print Preview or click on the Print Preview Button** to get an idea of how your spread sheet will look on the printed page.

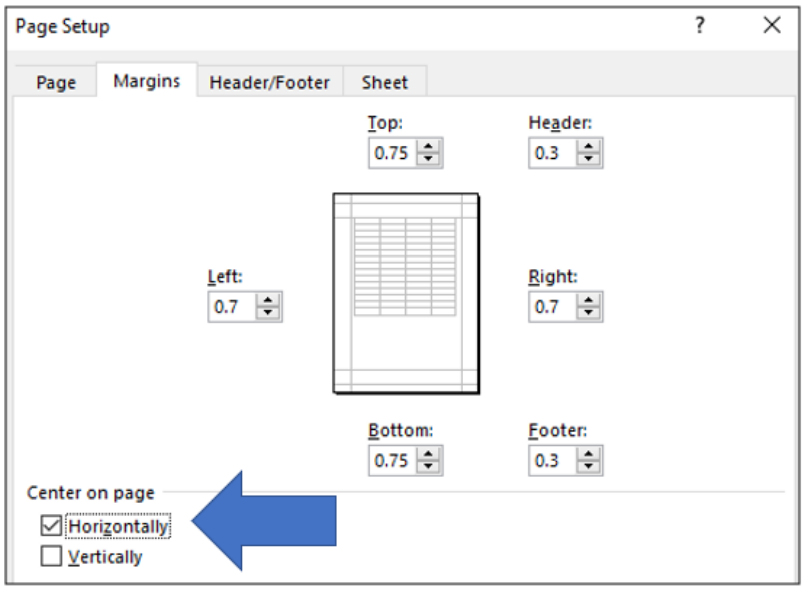


PAGE, MARGINS, HEADERS & FOOTERS, SHEET

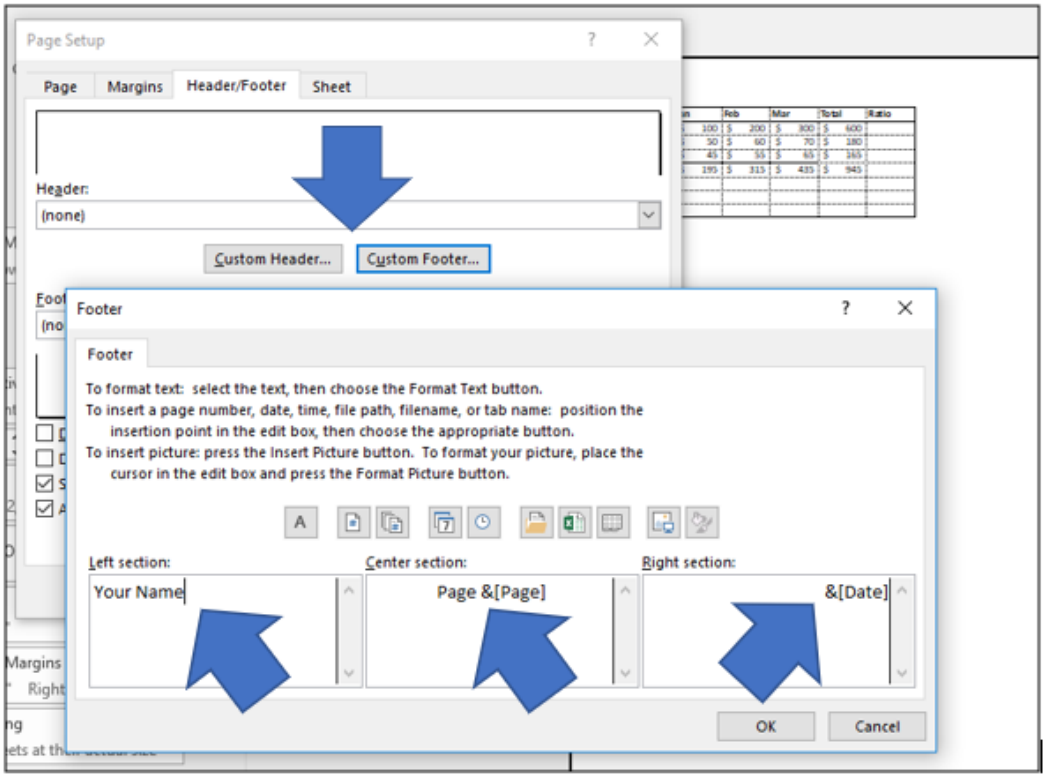
- From **Print Preview,** choose **Page Setup (Hyperlink at bottom of the second column)** to change the **Page, Margins, Header/Footer** and **Sheet** Settings.
- To change orientation (more data across the page) click on the **Page** tab and choose **Landscape.**



- To center on the page choose **Margins**, and check **Horizontally & Vertically.**

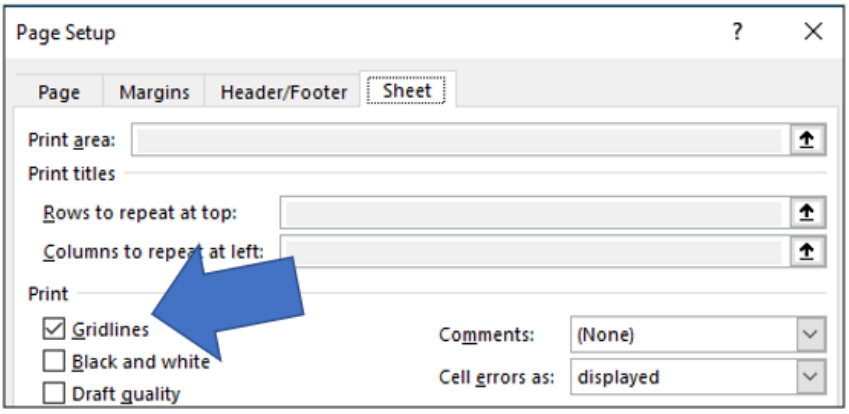


- To customize headers and footers choose the **Header/Footer** tab and click on **Custom Header...** or **Custom Footer...**

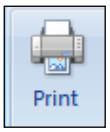


- Notice a **Left, Center and Right Section**. Add in **Page Numbers, Date, Time**, Book and Sheet codes as appropriate.

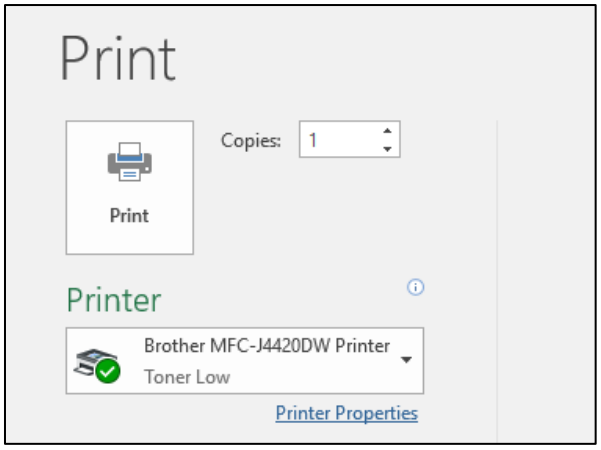
- Highlite text and use the **A tool** to change format, font, size, etc.
- To remove gridlines click on the **Sheet** tab and **uncheck gridlines.**



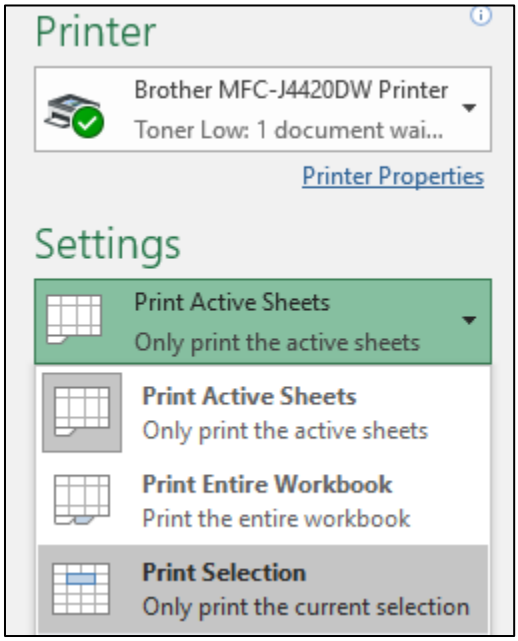
PRINTING THE SHEET

- Click on **OK** and choose 

to continue with the printing process.



- Notice under Settings that the **Active Sheet** is chosen by default.

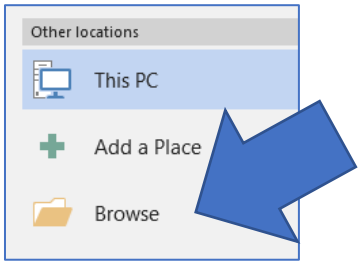


- **To print** just **part** of your sheet, **highlight the part** to be printed and choose **Print Selection**
- Choose **Print Entire Workbook** to print all the sheets in the workbook.

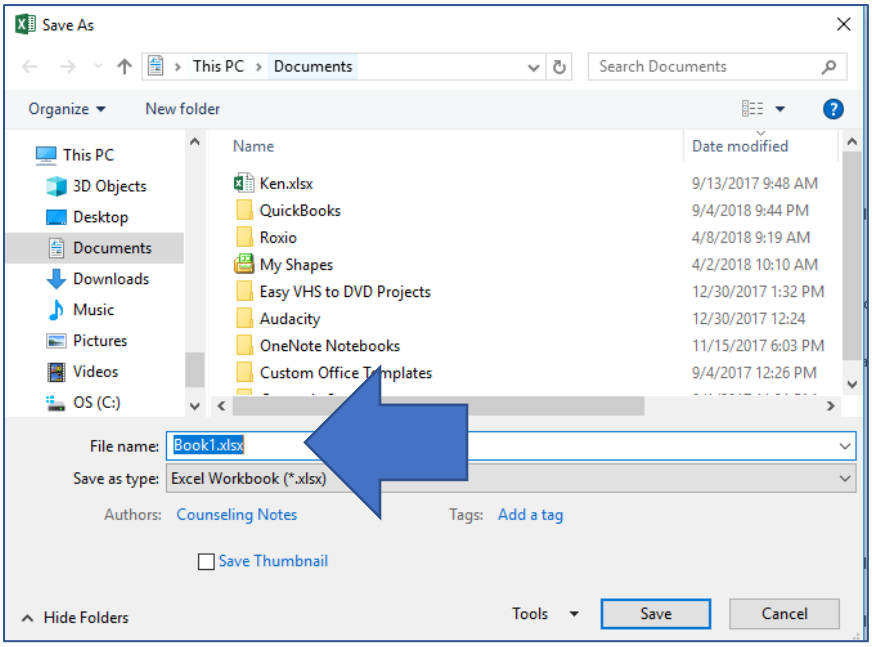
FILE COMMANDS

Saving Your Spreadsheet

- The first time you **Save**, the **Save As Dialog box appears.**
- Select **File Tab**, **Save or click on the Save button** on the **Quick Access Toolbar.** If you want to save under a new name, use the **File Tab, Save As**... command.
- You have **multiple location choices**. Scroll down to **Other locations** and select **Browse**.

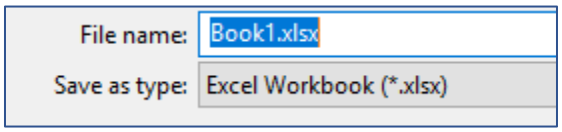


The Save As… dialog box appears with the default name **Book1.xlsx.** You are also placed in the default **Documents** folder.



You can also create **New Folders** here and **Sort your existing files**

- Navigate to the **Desktop** or to your **Flash Drive letter (E:, F:, G: etc)** and then Enter **your first name** as the file name and choose **Save**.



CLOSING

- To **Close** a workbook, choose **File Tab, Close**.

OPENING

- To **Open** a workbook, click **File Tab, Open** and choose a workbook.

NEW WORKBOOK

- To start a **New** workbook, press on **File Tab, New**

ABSOLUTE REFERENCES

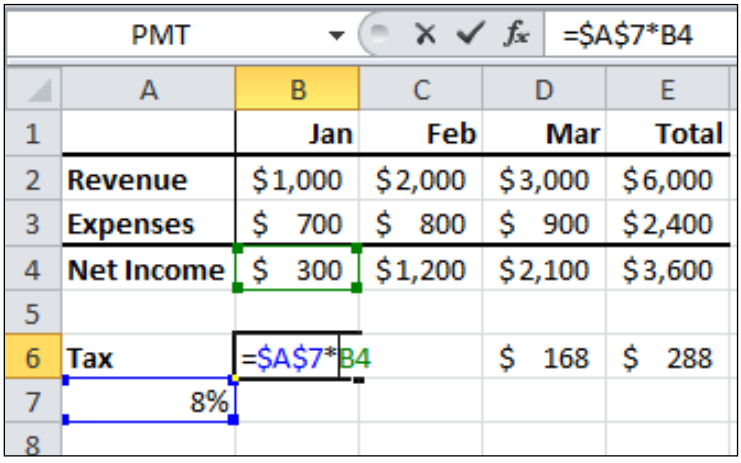
An absolute cell reference refers to a fixed cell location and is denoted by a $ around one or more parts of the cell for example:

=$B$7 (A fixed single cell)
=B$7 (A fixed row)
=$B7 (A fixed column)

Use the **F4** key to toggle the cell reference through the possibilities.

To calculate an **8%** tax on the **Net Income** from the Exercise below, you need to use an **Absolute Reference**.

1. Enter **Tax** in Cell A6 and **8%** in cell A7. Use the **%** (percent) key on your keyboard to automatically convert the 8 to a decimal. (**Note:** This is **NOT** the % format symbol on the format toolbar).
2. In cell B6 enter the formula, **=$A$7*B4 (The F4 key toggles a reference to absolute)**
3. Use **Fill Right** (Black Cross in bottom right corner of cell) to extend the formula through Cell E6.



REVIEW 3

1. Create the following spreadsheet using **Labels, Numbers and Formulas**
2. The Formula for the Savings in **Cell B7** uses the **Absolute Reference of Cell A8.**
3. The Formula for the Ratio in Cell F2 uses the **Absolute Reference of Cell E5**

	A	B	C	D	E	F
1	**Expenses**	**Jan**	**Feb**	**Mar**	**Total**	**Ratio**
2	**Rent**	$ 100	$ 200	$ 300	$ 600	
3	**Phone**	$ 50	$ 60	$ 70	$ 180	
4	**Food**	$ 45	$ 55	$ 65	$ 165	
5	**Total**	$ 195	$ 315	$ 435	$ 945	
6						
7	**Savings**					
8	**5%**					

Print the Sheet with your **Name in the Header** and the **Date** and **Page Number in the Footer**

REVIEW 4

1. Create the following spreadsheet using **Labels, Numbers and Formulas**
2. The Formula for the Tax in **Cell B8** uses the **Absolute Reference of Cell A8.**
3. The Formula for the Ratio in **Cell E2** uses the **Absolute Reference of Cell D6**

	A	B	C	D	E
1	**Item**	**Price**	**Quantity**	**Total**	**Ratio**
2	Item 1	$ 100	1		
3	Item 2	$ 250	1		
4	Item 3	$ 300	1		
5	Item 4	$ 20	4		
6	**Total**				
7	**TAX**				
8	**20%**				

Print the Sheet with your **Name in the Header** and the **Date** and **Page Number in the Footer**

CHARTS

CHART BASICS

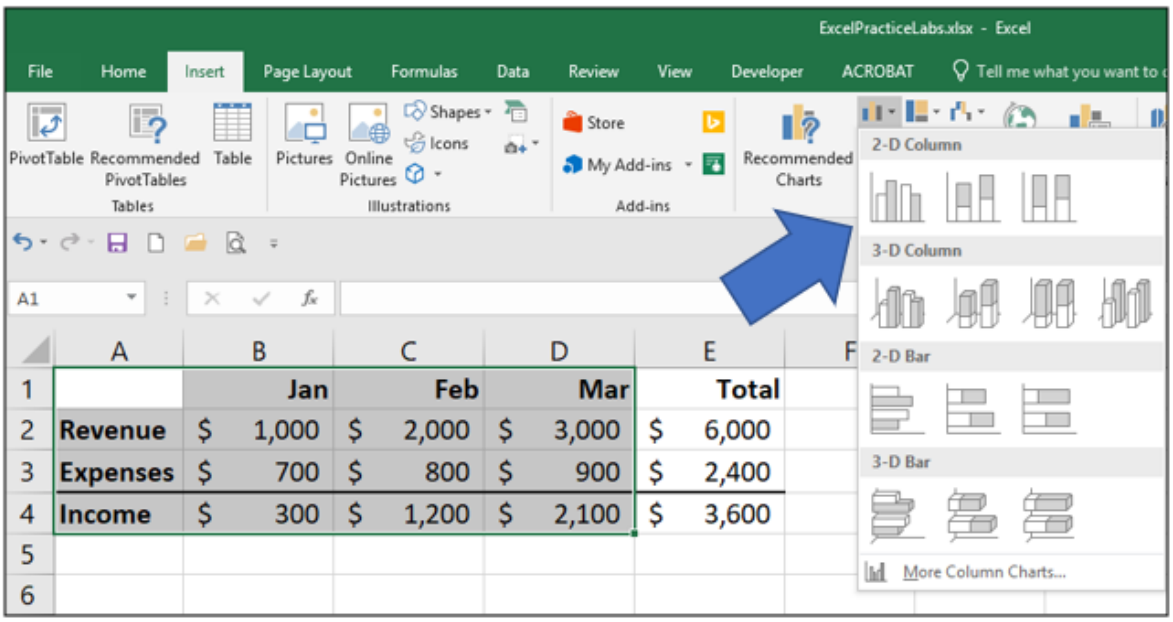
- Charts comprise of an X axis and a Y axis.
- The horizontal X axis is usually where the **Labels** are plotted.
- The vertical Y axis is usually where the **Values** are plotted.
- More than one Y axis is referred to as a **Series**.
- The **Legend** is an insert in the chart that defines the data markers
- There are three basic types of chart, **Pie, Bar/Column and Line**
- Charts can be represented in 2 or 3 dimensions.
- Titles and Annotations (Arrows, Boxes etc.) can be added to the chart.

CREATING A CHART

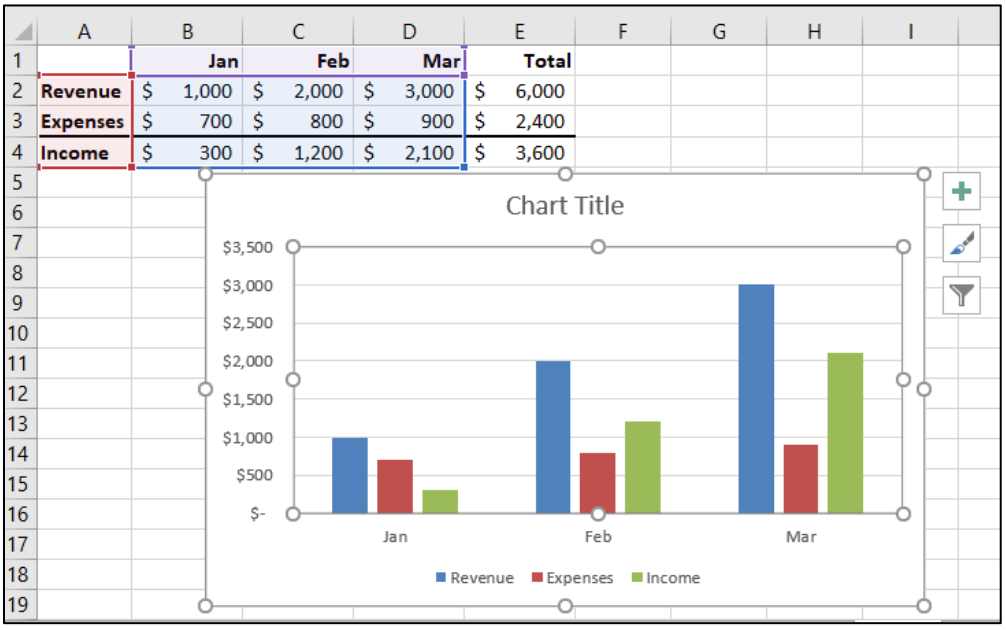
- To create a chart using the **Chart Tools**, select the data in the worksheet as follows:

A	B	C	D
	January	February	March
Revenue	$1,000.00	$2,000.00	$3,000.00
Expenses	$ 700.00	$ 800.00	$ 900.00
Income	$ 300.00	$1,200.00	$2,100.00

- Click on the **Insert Tab** and then on the **Column Chart Icon** and select the **2-D Column Chart**



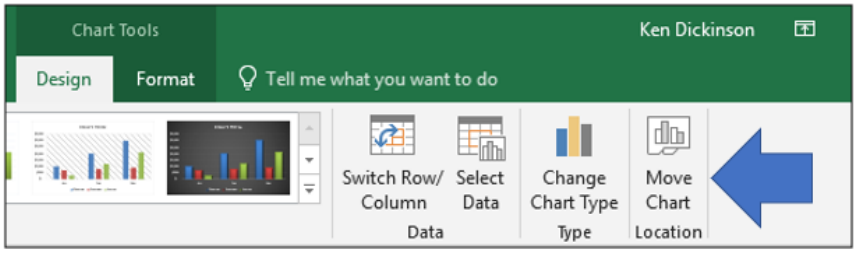
- The following chart is placed on your worksheet



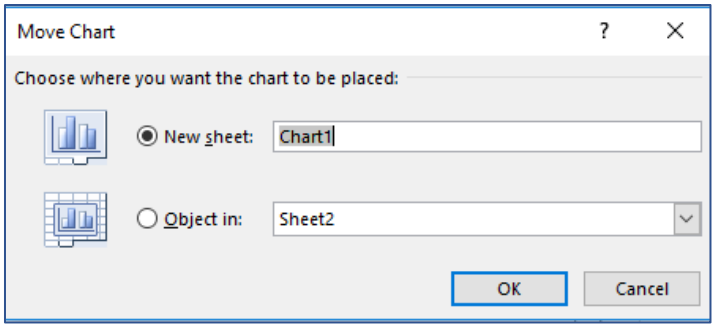
	A	B	C	D	E
1		Jan	Feb	Mar	Total
2	Revenue	$ 1,000	$ 2,000	$ 3,000	$ 6,000
3	Expenses	$ 700	$ 800	$ 900	$ 2,400
4	Income	$ 300	$ 1,200	$ 2,100	$ 3,600

MOVE CHART TO A NEW LOCATION

- To move your chart as a separate worksheet, **click on the Chart** and choose the **Design Tab**
- On the far right side of the **Design Tab** click on **Move Chart Location.**



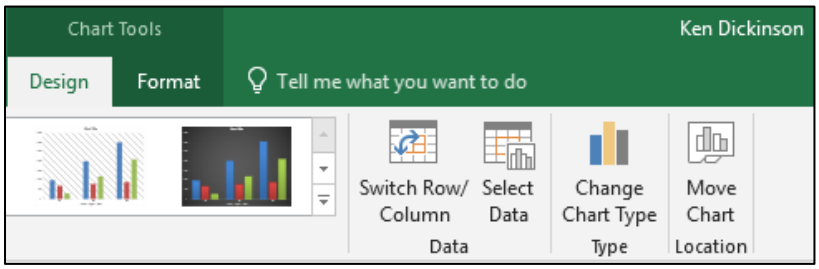
The following dialog box appears



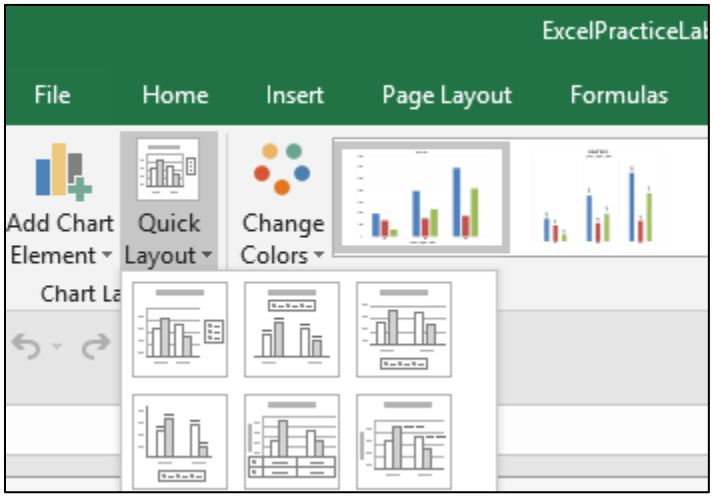
- Choose **New Sheet**

CHANGING YOUR CHART

- You can change your chart through the **Chart Tools**, **Design, Layout and Format Tabs.**



- You can change the **Chart Type**
- Switch **Row and Column Data**
- Use the **Quick Layout** choices



You can also use the quick access **Element, Style and Filter buttons**.

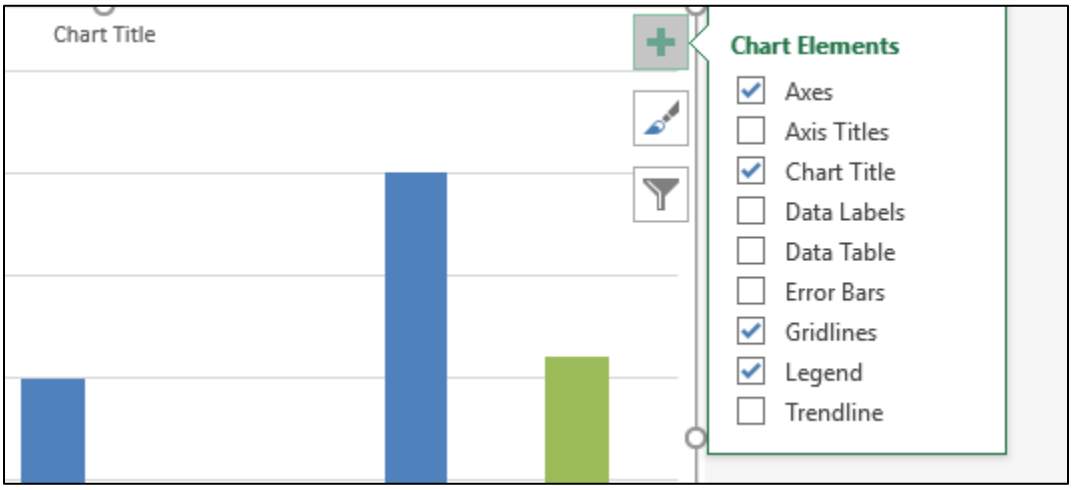


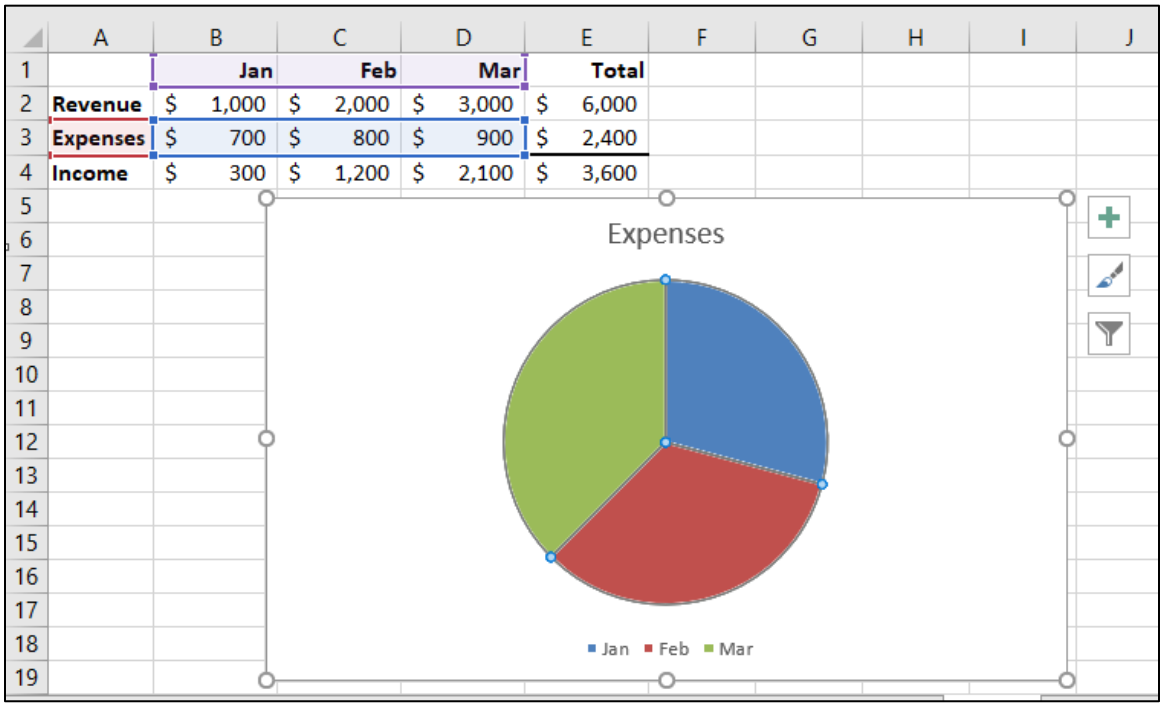
CHART NON CONTIGOUS DATA

To create a chart for **non contiguous data** such as a **Pie Chart for the Expenses**, use the **CTRL key** to select just the data that you need as follows.

- Select Cells **A1 through C1**
- Hold down the **CTRL Key** and select **Cells A3 through D3**

	A	B	C	D
1		Jan	Feb	Mar
2	Revenue	$ 1,000	$ 2,000	$ 3,000
3	Expenses	$ 700	$ 800	$ 900
4	Income	$ 300	$ 1,200	$ 2,100

Choose **Insert, Pie** and the following Chart appears



REVIEW 5

Create the following spreadsheet with **Labels Numbers and Formulas.**

Name	Rate	Hours	Earnings	Overtime	Overtime Earnings	Total Earnings	SSI Tax	Federal	State	Total Taxes	Net Pay
John	$ 15.00	40		10							
Mary	$ 20.00	30		12							
Steve	$ 12.00	35		12							
Jose	$ 27.00	30		8							
Totals											

Use the following **Notes** to help you figure out how to calculate the formulas.

9	**Notes:**
10	Earnings = Rate * Hours
11	Overtime Earnings = Overtime * Rate * 1.5
12	Total Earnings = Earnings + Overtime Earnings
13	SSI Tax = 6.5%
14	Federal Tax = 15%
15	State Tax = 10%
16	Total Taxes = SSI+Federal+State
17	Net Pay = Total Earnings - Total Taxes

Print the Sheet with your **Name in the Header** and the **Date and Page Number in the Footer**

WORKING WITH DATES

Dates are stored as numbers which permits a variety of Date Calculations for different situations.

FUTURE DATE COUNTDOWN

To create a Future date countdown routine use the **Today Function**

- In **Cell A2** enter a future date for example **12/31/2018**
- In **Cell B2** enter the Today Function **=Today()**
- In **Cell C2** enter the formula **=A2-B2** to subtract the two dates

	A	B	C
1	**Future Date**	**Today's Date**	**Days To Deadline**
2	12/31/2018	8/31/2018	122

- The result is the remaining days to the Future Date deadline

AGE FUNCTION

- To calculate a person's age from their date of birth use a combination of the **Today()** function and the **DOB**.
- Enter **Today's Date in Cell B4** and then Enter The **DOB in cell B5**
- **Subtract the Two dates in Cell B6** and then **Divide The Days Alive by 365.25 in Cell B7**

	A	B	C
1	**Future Date**	**Today's Date**	**Days To Deadline**
2	12/31/2018	8/31/2018	122
3			
4	Today's Date	8/31/2018	
5	DOB	12/31/1969	
6	Days Alive	17,775	
7	Age	=B6/365.25	
8	Age in Years	48.00	

- To show just the age in Years use the **Integer Function** In **Cell B8**

8	Age in Years	=INT(B7)

REVIEW 6

1. Create the following spreadsheet using **Labels, Numbers and Formulas**
2. The Formula for the Tax in **Cell B8** uses the **Absolute Reference of Cell A9.**

	A	B	C	D	E	F
1		**Jan**	**Feb**	**Mar**	**Apr**	**Total**
2	Item 1	$ 1,000	$ 1,010	$ 1,020	$ 1,030	$ 4,060
3	Item 2	$ 1,050	$ 1,060	$ 1,070	$ 1,080	$ 4,260
4	Item 3	$ 2,000	$ 2,010	$ 2,020	$ 2,030	$ 8,060
5	Item 4	$ 1,500	$ 12,510	$ 23,520	$ 34,530	$ 72,060
6	**Total**	**$ 5,550**	**$ 16,590**	**$ 27,630**	**$ 38,670**	**$ 88,440**
7						
8	**Tax**					
9	5%					

3. **Print the Sheet** with your **Name in the Header** and the **Date and Page Number in the Footer**

4. Create a **3-D Column Chart** for the data range **A1 through E5**