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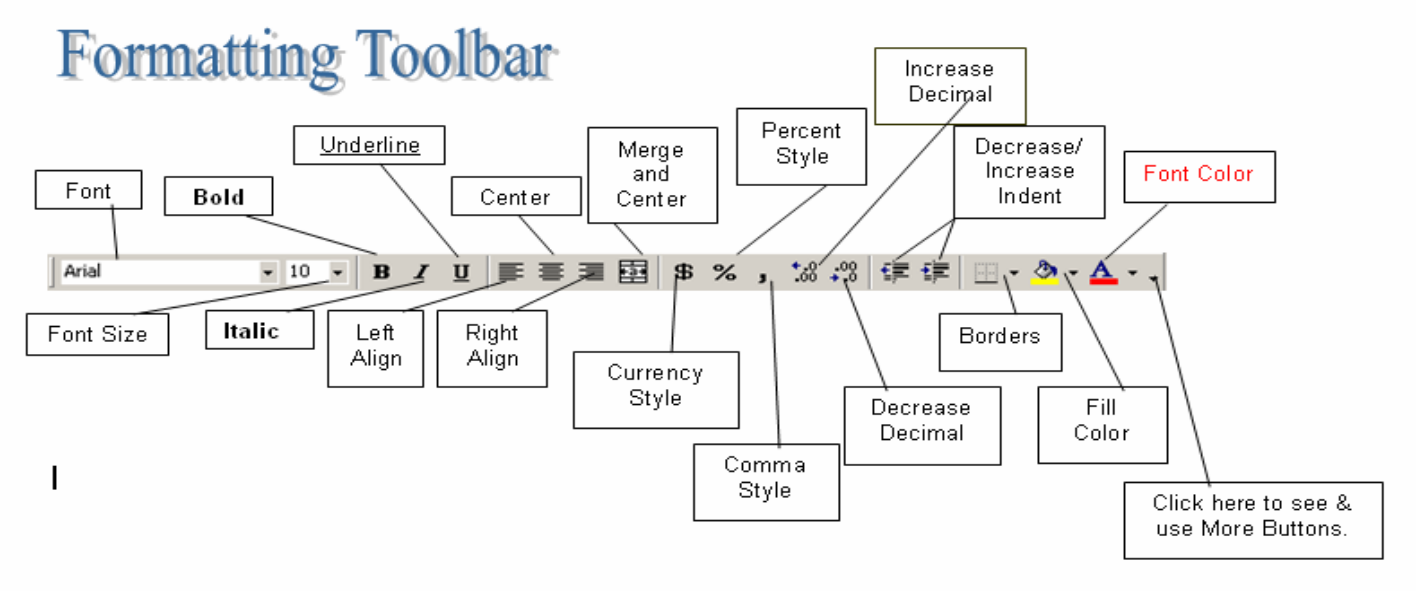
Microsoft Excel 2003

Microsoft Excel is an electronic spreadsheet program. Electronic spreadsheet applications allow you to type, edit, and print spreadsheets. Excel can be used for financial, statistical, or list information.

Formatting Toolbar



Note:

- A light gray button is unable to be used. It is inactive.
- An indented button means that the button is selected (that particular feature is on).

Formatting

Cells can be formatted either before or after you type. For instance, you can choose how the date will look or show that numbers are currency or percentages. Whether or not you format before or after you type, you will need to select what it is that you are formatting.

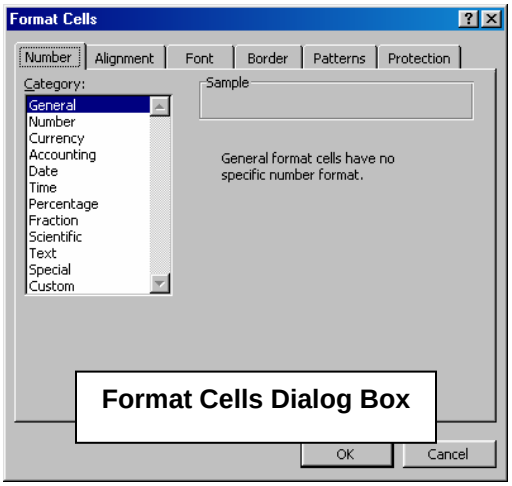
To bring up the **Format Cells** dialog box, do one of the following:

- Open the **Format** menu and select **Cells…**
- Right-click on the selected cells and choose **Format Cells…**from the Shortcut menu.

OR

Keyboard Shortcut:

- Use **Ctrl+1**.



Format Cells Dialog Box

Format Cells Dialog Box – Click on a tab to move to that area of the dialog box. After making changes, either click on another tab to make further changes or click **OK** when finished.

How to change Font, Font Size, Font Style, or Font Color:

The font is the type or design of text that is used in the workbook.

- Once in the **Format Cells** dialog box, click on the **Font** tab. Click on a tab to move to that area of the dialog box. After making changes either click on another tab to make further changes or click **OK** when finished.

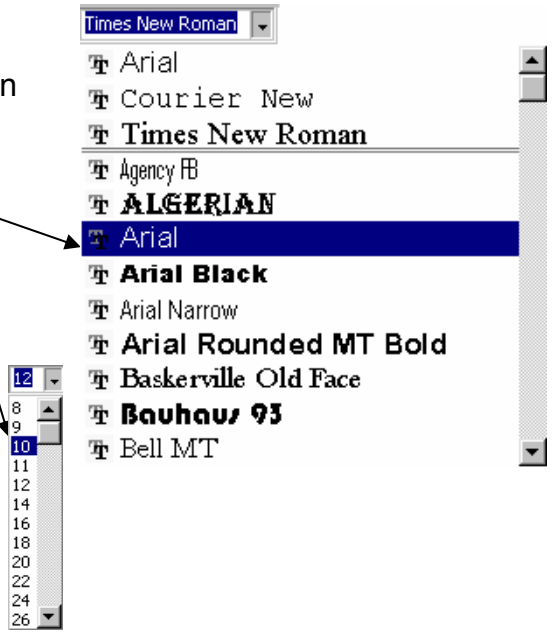
- Go to the area where you would like to make a change (i.e. Font Size, Font Style). Use the scroll bar to the right of the list box if necessary to view the item you want to select.
- Point to the item you want to select and click the left mouse button.

Note: You can also find Font Color, Underline Style, Underline Color, and Effects in the dialog box. Either click the down-arrow and make your selection or click in the check box to make a selection. Once you make all of the changes that you want in the dialog box, click the **OK** button.

Change Font and Font Size Shortcut

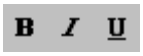
- Click the down arrow (upside-down triangle) to the right of each.

- Select your preference from the drop-down list by pointing to the type you want and clicking on it to make your selection.
- Notice the scroll bar to the right of the list. You can use this to see the other choices on the list.



Font Style Shortcut

- Click on the buttons to make text appear **Bold**, *Italic*, or Underline.



Bold – Italic- Underline

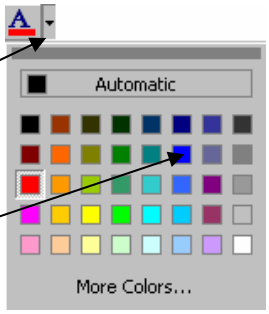
Bold- Text is darker than regular font.

Italic- Text is slightly angled.

Underline- A thin line is underneath text.

After selecting one of the font styles the button will be indented (or a dimmer gray). This lets you know what has been selected. To turn off the style just click on the button again. 

Font Color Shortcut



- Clicking the **Font Color** button will change the
- text to the color that is shown on the button.
- If you would like to change to another color:
  - Click the down arrow (upside-down triangle) to the right of the button.
  - Click the color that you would like to use.

Fill Color works similarly. Click the Fill Color button or the down arrow to select another color. The fill color is the background color of the selected area.

How to change Alignment or Indentation

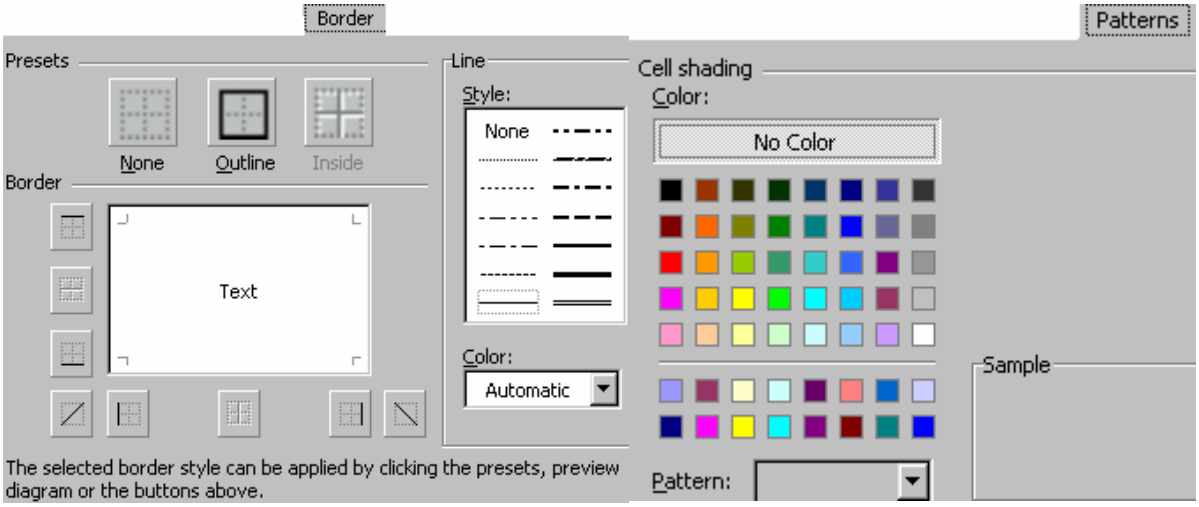
Alignment- Refers to the placement of the text in relation to the cell. For example Left, Center, or Right Alignment.

Indentation- Refers to the placement of the text in relation to the cell. Indentation creates more space at the beginning of a line. For example, the extra space at the beginning of a paragraph.

- Once in the **Format Cells** dialog box, click the **Alignment** tab.
- Go to the area where you would like to make a change (i.e. Horizontal Alignment, Vertical Alignment, and Text Control). Click the down arrow (upside-down triangle).
- Point to the item you want to select and click the left mouse button.
- **Orientation**- to change the orientation either use the spinner to increase or decrease the degrees of orientation or click and drag the red box to the desired angle.
- **Text Control**- click in the check box next to any of the options in this area that you would like to use (Wrap text, Shrink to fit, Merge cells).
- Click **OK** for changes to be made

Using Borders and Shading

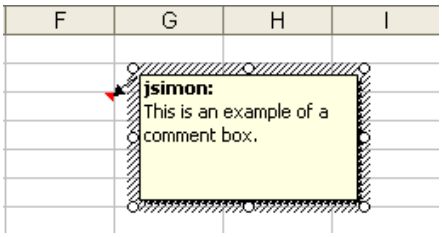
Borders - A line or outline surrounding a selected area.
Shading - The background color or pattern of a selected area.



If you would like to insert an image into the background of the data on your worksheet, select the cells where you would like the image to appear.

Creating Comments

Add a Comment



- Click in a cell where you want to add a comment.
- Select the **Insert** menu and click on **Comment**. A comment box will appear.
- Type your comments.

OR

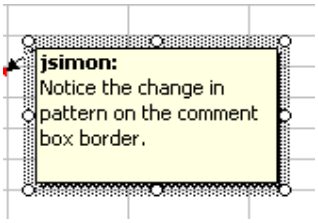
- Right click in the cell and select **Insert Comment.**

Click outside the cell when you are done. The comment will disappear. You will notice that a tiny red triangle will appear in the upper-right hand corner of the cell. Move your cursor over the cell to display your comment once again.

Edit a Comment

- Highlight the cell with the comment.
- Select **Insert** on the menu and then **Edit Comment**.

Delete a Comment



- Highlight the cell with the comment.
- Right click on the cell and select **Delete Comment**.

OR

- Right click on the cell and select **Edit Comment.**
- Select the frame of the comment until the box border looks similar to the graphic to the right.
- Press **Backspace** and delete the comment.

Erasing Data and/or Formatting

Open the **Edit** menu and go to **Clear**. In the **Clear** submenu you can choose what you want to clear or delete.

All - Clears everything in the selected area (both contents and any formatting)

Formats - Clears the formatting in the selected area.

Contents - Clears the contents (data) in the selected area. Any formatting will remain in the selected area.

Formulas

Learn how to use Excel as your calculator by typing formulas into cells.

Mathematical Operators

Excel uses familiar signs to build formulas.

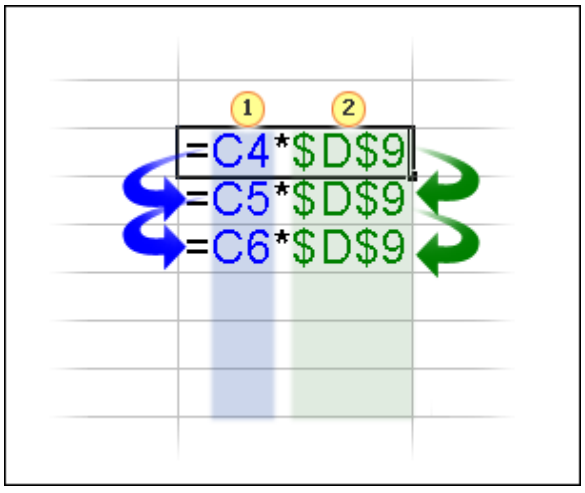
Add (+)	=10+5
Subtract (-)	=10-5
Multiply (*)	=10*5
Divide (/)	=10/5

Cell References

Cell references identify individual cells, rows, and/or columns in a worksheet. They tell Excel where to look for values to use in a formula.

Cell references	Refer to values in
A10	the cell in column A and row 10
A10,A20	cell A10 and cell A20
A10:A20	the range of cells in column A and rows 10 through 20
B15:E15	the range of cells in row 15 and columns B through E
A10:E20	the range of cells in columns A through E and rows 10 through 20

Relative Every relative cell reference in a formula automatically changes when the formula is copied down a column or across a row. As the example illustrated here shows, when the formula =C4*D9 is copied from row to row, the relative cell references change from C4 to C5 to C6.



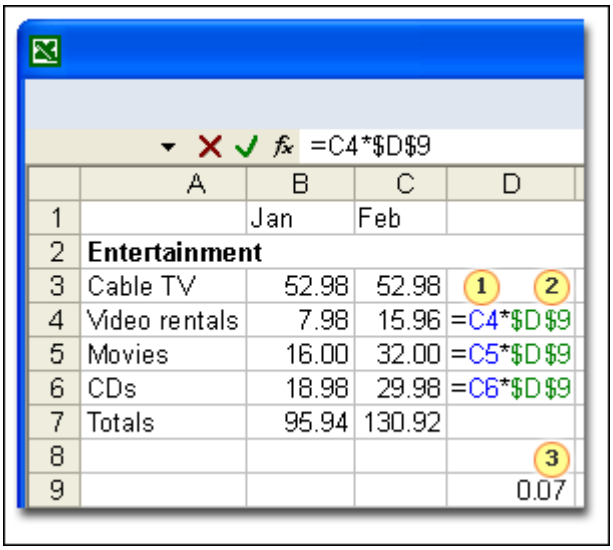
Absolute An absolute cell reference is fixed. Absolute references don't change if you copy a

formula from one cell to another. Absolute references have dollar signs ($) like this: D9. As the art shows, when the formula =C4*D9 is copied from row to row, the absolute cell reference remains as D9.

Mixed A mixed cell reference has either an absolute column and a relative row, or an absolute row and a relative column. For example, $A1 is an absolute reference to column A and a relative reference to row 1. As a mixed reference is copied from one cell to another, the absolute reference stays the same but the relative reference changes.

Example

Use absolute references to refer to cells that you don't want to change as the formula is copied. References are relative by default, so you would have to type dollar signs, as shown at number 2 in the example, to change the reference type to absolute.



Imagine that you receive a package of discount entertainment coupons offering a 7 percent discount for video rentals, movies, and CDs. You wonder how much you could save in a month by using the discounts. You could use a formula to multiply those February expenses by 7 percent.

- Type the discount rate **0.07** in the empty cell D9 and then type a formula in cell D4, starting with **=C4***.
- Enter a dollar sign ($) and **D** to make an absolute reference to column D, and **$9** to make an absolute reference to row 9. Your formula would multiply the value in cell C4 by the value in cell D9.

- Next, copy the formula from cell D4 to D5 by using the fill handle. As the formula is copied, the relative cell reference changes from C4 to C5, while the absolute reference to the discount in D9 does not change; it remains as D9 in each row it is copied to.

Entering a Formula

- Go to the cell where you want to enter a formula.

Do one of the following:

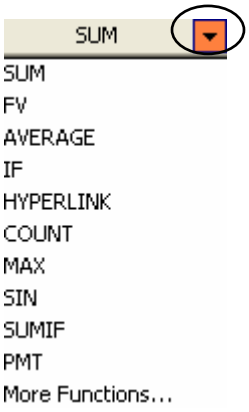
1. Open the **Insert** menu and select **Function…**
2. Click the **AutoSum** button on the Standard toolbar.
3. Click the **Insert Function** button next to the Formula Bar.

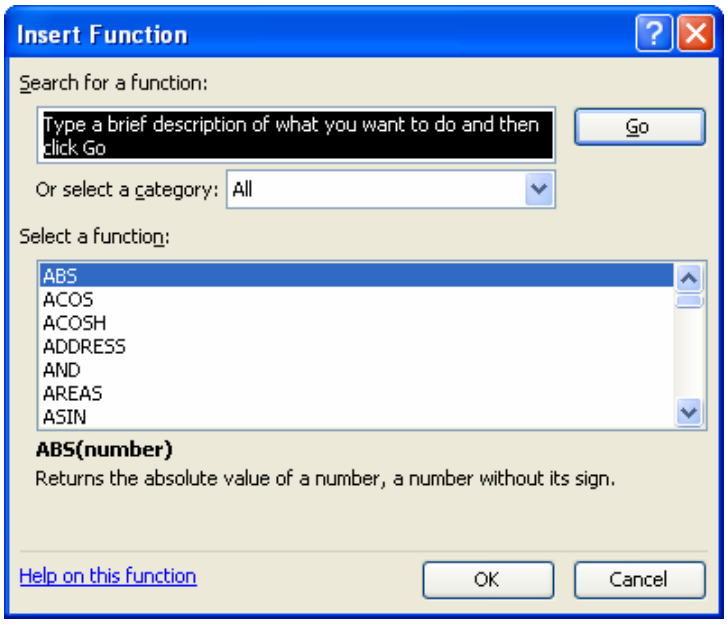
- Select a **Function** (or a Category if necessary).

  Note: You can also search for a function if you are unsure of which function to use.

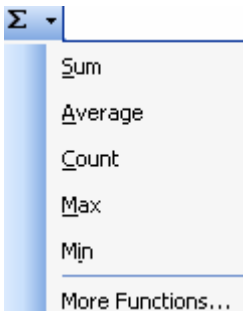
- Click **OK**.

You may need to click the down arrow and select from a drop-down list.





The **AutoSum** button on the Standard toolbar will quickly create a formula with the **Sum** function. Or you can click the down arrow next to the button and select another function.



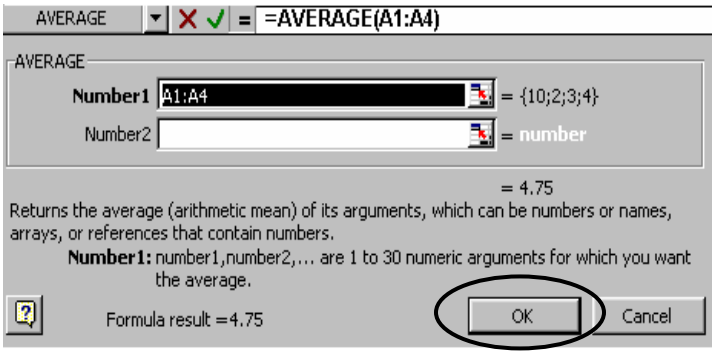
OR

Keyboard Shortcut for SUM formula:

ALT + =

- The function will be explained at the bottom of the dialog box. It describes what is needed in your formula.
- Look at the dialog box and see if the correct range of cells is in the number box. If the range is correct, then click the **OK** button. If it is not correct, then use the following instructions.

- Click the **Collapse Dialog** button.
- Select the correct range of cells. Or you can type the range; however you must use the cell address of the first cell in the range, a colon, and then the cell address of the last cell in the range with no spaces. Example: a1:a4
- Click the **Collapse Dialog** button again to bring the dialog box back to continue entering a formula.



- Click OK or press the **Enter** key.

The answer will appear in the cell and the formula that was created will appear in the Formula Bar when the cell is selected.

Editing a Formula

- Go to the cell that has the formula that you would like to edit.

- Click in the Formula Bar, press the F2 key (edit mode), or double-click in the cell containing the formula.
- Use the arrow keys to move the cursor and type the changes that you want to the formula. Remember you can use the **Delete** or **Backspace** keys to erase one character at a time.
- If you want to change to a new Function, then either type the new function or first delete the entire old formula and start over with a new formula. Pay close attention to the formula bar and make sure the formula is correct. It is possible to have multiple functions in use at once (nested functions), so unless that is what you are trying to accomplish, remember to erase functions that are not being used.

For example:

- Select the formula by pointing to the beginning of the formula, clicking the left mouse button, holding it down, and gliding the mouse across the formula until it is selected. Then press **Delete**. Now a new formula can be created.
- The formula can also be deleted by moving to the cell that contains the formula and pressing **Delete**.

OR

- After clicking in the Formula Bar, pressing F2, or double-clicking in the cell, type the changes to the formula.
- Example: Changing the cell range from (A1:A4) to (A3:A6).
- Press the **Enter** key.

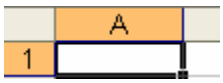
Display formulas on your worksheet

- On the **Tools** menu, point to **Formula Auditing**, and then click **Formula Auditing Mode**  .
- On the **File** menu, click **Print**.
- Under **Print what**, select an option to print the selection, the active sheet(s), or the entire workbook.

Note: If you want to print more than one worksheet at the same time, select the worksheets before you print.

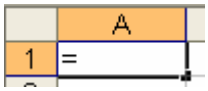
Linking Data

You can link data between cells, worksheets, and workbooks. This might be useful if you have data in one workbook that you would like to view in other areas. If you link the data, then changes you make to that data in the original workbook will be reflected in all of the workbooks linked to it.

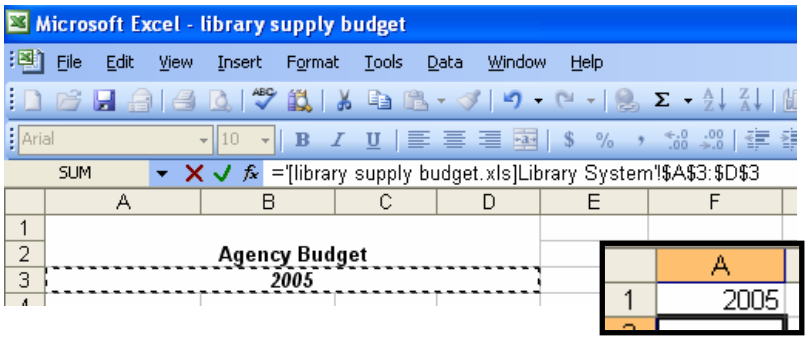


To link cells, worksheets, workbooks:

- Click within the cell that you want the link to appear.



- Type the equal sign.
- Then go to the cell, worksheet, or workbook that has the data that you want to link to. Click within the cell or type the cell address (**Note:** For a linked worksheet or workbook you need to type the entire path, so it is easier to just click within the cell).



- Press **Enter**.

Formatting Exercises

Exercise 1

Using Formatting Toolbar **Page 2 & 3**

1. Using the **akron area restaurants** file, highlight AZTECA and change text color to **RED** using the formatting toolbar.
2. Highlight the cell that reads AKRON AREA RESTAURANTS and change cell fill color to **GREEN** using the formatting toolbar.

Exercise 2

Changing Font , Font Color, Font Size, and Font Style **Page 3**

1. Highlight the phone numbers and change font to **BOOK ANTIQUA** using the formatting cells dialog box.
2. Select any restaurant name and change the font color to **YELLOW** and font size to 14 using formatting cells dialog box.
3. Select AKRON AREA RESTAURANTS cell and change to **BOLD**.

Exercise 3

Using Alignment, Orientation, Text Control, Merge and Center, Indentation **Page 4**

1. Select NAME, ADDRESS, and PHONE cells and **CENTER** them**.**
2. Select PAISANO'S PIZZA cell and change orientation to a 45◦ degree angle.
3. Select VACCARO'S TRATTORIA cell. You will notice that BISTRO will appear in the cell as well. Use **Shrink to Fit** feature to make it fit into the cell.
4. Select AKRON AREA RESTAURANTS cell and merge and center cells **A1 to F1**.
5. Practice decreasing and increasing and indent in any of the cells.

Exercise 4

Number Styles **Page 5 & 6**

1. Select AVG PRICE cells and select CURRENCY number style.

Borders and Shading

1. Select all data and create an Outline border.
2. Select address data cells and change background color to **PINK.**

Exercise 5

Format Painter **Page 6**

1. Use format painter to copy VACCARO'S TRATTORIA BISTRO phone number cell formatting into KEN STEWART'S GRILLE phone number cell (D6).

Erasing Data and/or Formatting

1. Select ARBY'S cell and clear **CONTENTS**.
2. Select WENDY'S cell and clear **ALL** data.
3. Select MCDONALD'S cell and clear **FORMATTING**.

Formula Exercises

Exercise 1: Using Formulas – Click here for Using Formulas Worksheet

Create a formula to add

Before you work with the data that's on the worksheet, create a formula in an empty cell in column A. Select cell A2, add 183 to 39, and press ENTER to display the result. Next, click cell A2 to see the formula in the **formula bar**  .

Here's how Enter an equal sign (=), type **183** and the plus sign operator (+), type **39**, and then press ENTER. The answer is 222.

Note: If the formula bar is not at the top of the worksheet, on the **Tools** menu, click **Options**. Click the **View** tab, and select the **Formula bar** check box.

Create formulas for other arithmetic

In column A, enter three separate formulas in three separate cells. Enter a formula to subtract 39 from 183. Enter another formula to multiply 183 by 39. Finally, enter a formula to divide 183 by 39.

Here's how To subtract, **=183-39** (answer, 144); to multiply, **=183*39** (answer, 7137); to divide, **=183/39** (answer, 4.692307692).

Add up a column of numbers

Now you'll work with values that already exist in the worksheet. Use **AutoSum** to total the January values in column D.

Here's how Click in cell D8, click **AutoSum**  on the **Standard** toolbar, and then press ENTER. The total is 95.94.

Note: If the **AutoSum** button is not available, click the **Toolbar Options** arrow at the end of the **Standard** toolbar, then click **Show Buttons on Two Rows**.

Copy a formula

Copy the formula from cell D8 to cell E8.

Here's how Use the fill handle  to copy the formula in cell D8 to cell E8. The February total is 126.93.

1. Select cell D8, and then position the mouse pointer over the lower-right corner of cell D8 until the black cross (+) appears.
2. Then drag the fill handle over cell E8. When you release the fill handle, you should see the February total 126.93 in cell E8.

Add up a row of numbers

Now you'll try something new by totaling the numbers in a row rather than in a column. The procedure is the same. You just click in a different place. Use **AutoSum** to total the figures in row 6. **Here's how** Click in cell F6, click **AutoSum** on the **Standard** toolbar, and then press ENTER. The answer is 48.00.

Exercise 2: Cell References - Click here for Cell References Worksheet

Type cell references in a formula

In cell E9, type a formula using cell references to total January video rentals and February CD expenses.

Here's how In cell E9, type **=SUM(B5,C7)**. Notice that when you type **B5**, Excel highlights cell B5, and when you type **C7**, Excel highlights cell C7. Enter the formula exactly as shown, and then press ENTER to display the formula result, which is 37.96.

Notes: You can get the same result by typing **=B5+C7**. The SUM function is most useful when you have more than a few values to add.

Select cell references for a formula

In cell E10, try entering the same formula by clicking cell references instead of typing them. Here's the formula: =SUM(B5,C7)

1. Type an equal sign in cell E10.
2. Then type **SUM** followed by an opening parenthesis.
3. Click cell B5, and then type a comma.
4. Click cell C7, type a closing parenthesis, and then press ENTER to get the result 37.96.

Use an absolute reference in a formula

In cell D11, recreate the example from the lesson by figuring out how much you'd save with a 7 percent discount on February's video rentals, movies, and CDs.

1. In cell D11 type the discount rate, **0.07**.
2. In cell D5 type **=C5*D11**, and then press ENTER. The result is 1.12.
3. Next copy the formula down through row 7 by selecting cell D5 and positioning the mouse pointer over the lower-right corner of that cell until the black cross (+) appears. Then drag the fill handle down the rows, releasing it in cell D7. The results are 2.24 in cell D6 and 2.10 in cell D7.

As the formula is copied, the relative cell references change from C5 to C6 to C7, while the absolute reference to cell D11 does not change. It remains as D11 in each row it is copied to, as you will see if you click cells D6 and D7 and look at the result in the formula bar  near the top of the worksheet.

Add up several results

Total the savings from the previous exercise by entering a formula into cell D8.

Here's how Select cell D8 by clicking it, click **AutoSum**  on the **Standard** toolbar, and then press ENTER. The result is 5.46. You could also type **=SUM(D5:D7)**.

Change values and totals

See formula results automatically updated when you make a revision. In cell B6 change "16.00" to "28.00." The total in B8 will be updated, in this case to 107.94. If you want, change any other values to see the total updated again. **Note** If results are not updated, on the **Tools** menu, click **Options**. Click the **Calculation** tab, and select the **Automatic** check box.

Exercise 3: Functions and error values - Click here for Functions Worksheet

Excel needs very precise instructions. This means that formulas must be typed exactly as shown. Missing a comma or parenthesis, or misspelling a function name, will produce errors.

Find an average

In cell D8, find an average of the totals in column B and column C.

Here's how Select cell D8, click the arrow on the **AutoSum** button  , and click **Average** in the list. Then press ENTER. The answer is 113.43.

Find the largest number

You don't need a formula to determine that 95.94 is the largest number in column B. But imagine that the list is long, in which case a formula would be useful. In cell B9, use a formula to find the largest number.

Here's how Select cell B9, click the arrow on the **AutoSum** button, and click **Max** in the list. Then press ENTER.

Before you go on to the next exercise, delete the result in cell B9.

Find the smallest number

Again, it's obvious that 15.96 is the smallest number in column C, but try using a formula anyway in cell C9 to find the smallest number in column C.

Here's how Select cell C9, click the arrow on the **AutoSum** button, and click **Min** in the list. Then press ENTER.

Before you go on to the next exercise, delete the result in cell C9.

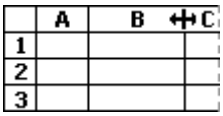
Display and hide formulas

Display all the formulas in the worksheet, and then hide all the formulas.

Here's how On the **Tools** menu, point to **Formula Auditing**, and then click **Formula Auditing Mode**. To hide the formulas, click **Formula Auditing Mode** again. You can also press CTRL+` (next to the 1 key) to display and hide formulas.

Error values

To create an ##### error so that you can fix it, make column B narrower by dragging the column boundary until the ##### error appears. To do this, move the pointer over the column heading until the pointer changes to a dark cross with two arrow points. Then drag the column. You may have to drag the column boundary several times to make the column narrow enough to create the ##### error.



Then resize the column again to make the formula result appear. The display is updated whenever you drop the column boundary in a new position, so it can take more than one try to make the column wide enough to display the formula result.

Error value #Name?

Here's another error you can create and fix. Use the SUM function, but misspell it.

In cell B8, delete the total 95.94 and then type **=SUME(B4:B7)** (notice the extra "E" typed in the function name). After you press ENTER you'll see #NAME? because of the spelling error.

To fix the error, select cell B8 and then place the pointer in the formula bar. Or double-click in the cell to display the formula and then edit it. Delete the "E" from "SUME" and press ENTER. The formula result will appear correctly.