

# UNIT FOUR: Using Numbers, Formulas, and Functions



## Topics:

- Using the Sort function
- Create a one-input data table
- Hide columns
- Resize columns
- Calculate with formulas
- Explore functions

# Do This!

## I. Using the Sort Function:

1. **Open** a new workbook.
2. **Create** the following class list as shown below:

	A	B	C	D
1				
2				
3	First Name	Last Name	Grade Level	
4	Juanita	Jones	12	
5	John	Palmer	12	
6	Roy	Smith	11	
7	Tom	Brown	12	
8	Kim	Tower	11	
9	Sean	Jones	11	
10	Georgia	Jensen	12	

3. Select the data table by clicking **Cell A4** and dragging through to **Cell C10** to highlight the data (not the column headings).

4. Click the **Data Tab** to open the **Data Ribbon** and click **Sort Button**.

5. Under **Sort by**, select **First Name**, and then click **A to Z** (ascending).

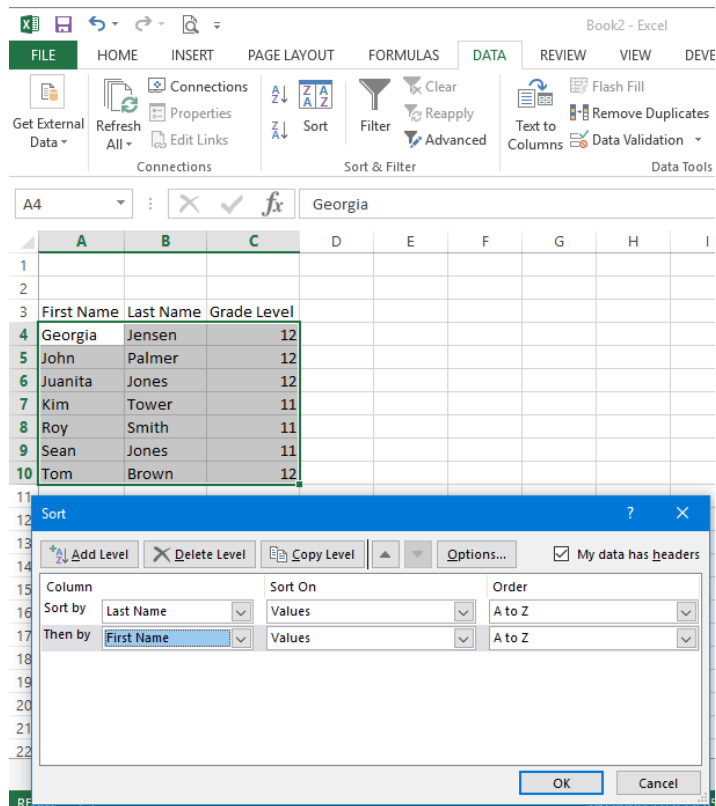
6. Click **OK**.

The screenshot shows the Microsoft Excel interface. The **DATA** ribbon is active, and the **Sort** button is highlighted. The spreadsheet below shows the data from the table above, with cells A4 through C10 selected. The **Sort** dialog box is open, showing the following settings:

- My data has headers:**
- Sort by:** First Name
- Sort On:** Values
- Order:** A to Z

Buttons for **OK** and **Cancel** are visible at the bottom of the dialog box.

7. Select the data table again, **Cells A4 to C10**.
8. On the **Data Ribbon**, click **Sort** again.
9. Under **Sort by**, select **Last Name**. Next click the **Add Level Tab**.
10. Under **Then by**, select **First Name**. Both are by **A to Z (ascending)**.

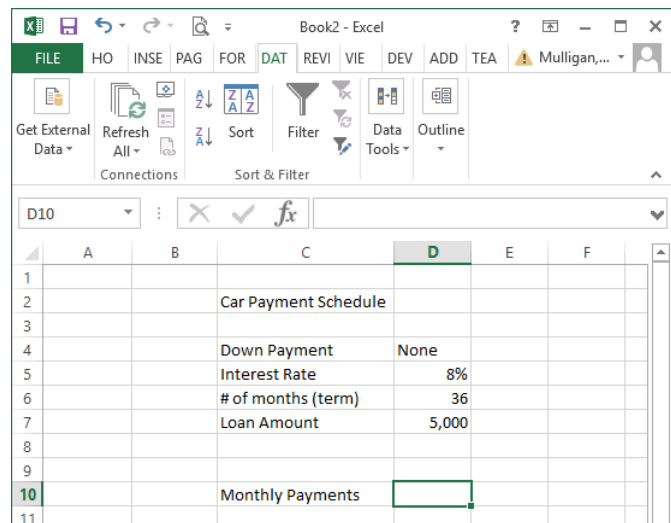


11. Click **OK**. Notice the 2 Jones entries, sorted by Last Name first, then First Name.
12. **Save** (and close) the worksheet in your d as: **Class List**.

**Do This!**

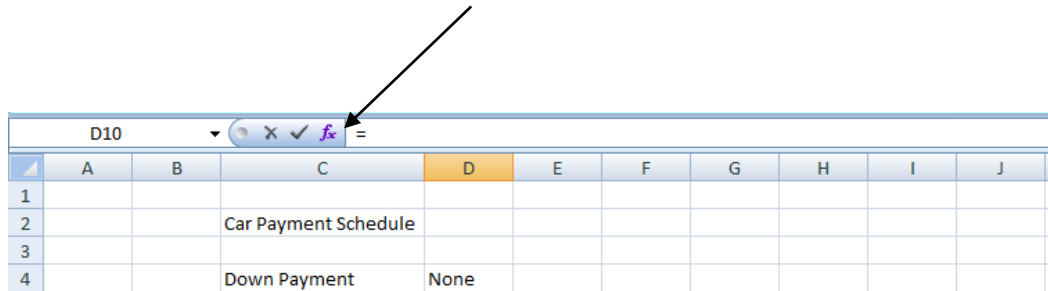
II. **Creating a One-input Data Table:** Note: All formulas start with the = sign. When you enter a formula and press ENTER, the result appears in the cell, and the formula is displayed in the Formula Box.

1. **Open** a new workbook.
2. In **Cell C2**, type **Car Payment Schedule** and hit **ENTER**.
3. **Widen Column C** so that the text fits.
4. **Type** the following text in the cells shown in the chart below:

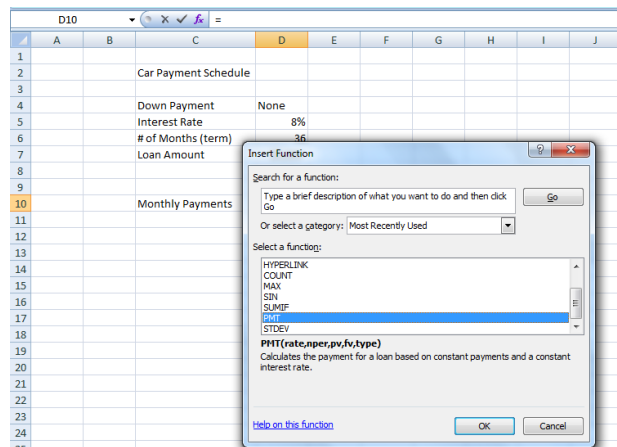


5. Click in **Cell D10**.

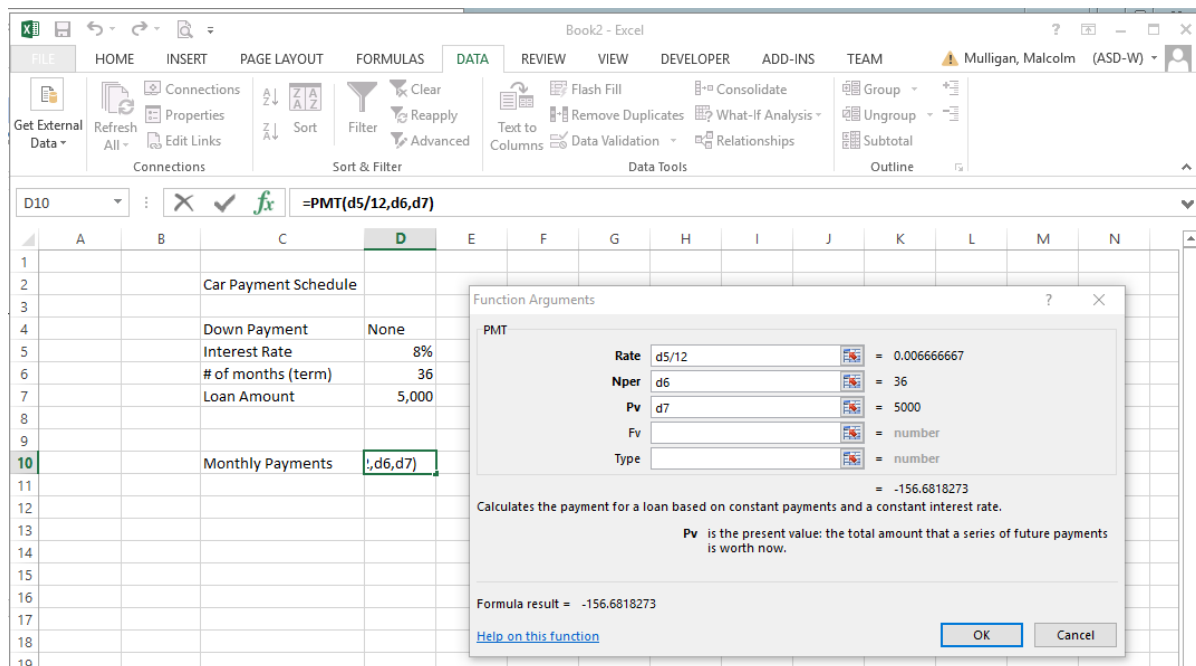
6. Click the **Edit Formula** button (*fx*).



7. Under **Select a Function**, click **PMT** (Payment).



8. Fill in the following cells to **calculate what the monthly payment would be for a loan of \$5,000 over 36 months (3 years) at 8% interest each month**:



9. Click **OK** and Excel calculates the monthly payment and places it in **Cell D10**:

	A	B	C	D	E	F
1						
2			Car Payment Schedule			
3						
4			Down Payment	None		
5			Interest Rate	8%		
6			# of Months (term)	36		
7			Loan Amount	\$5,000		
8						
9						
10			Monthly Payments	(\$156.68)		
11						

10. From the File Button, Save As: **Payments** in your documents.

11. With the workbook still open, make the following changes and see the monthly payment change automatically (in Cell D10) now that you have entered the original formula:

- **Type 24 in Cell D6** and hit **ENTER** to change the months of the loan to 24 months (2 years instead of 3 years). ANSWER in C10 should be \$226.14
- **Type 12.5 in Cell D5** and hit **ENTER** to increase the interest rate from 8% to 12.5%. ANSWER in C10 should be \$236.54
- **Type 10,000 in D7** and hit **ENTER** to increase the loan amount from \$5,000 to \$10,000. ANSWER in C10 should be \$473.07

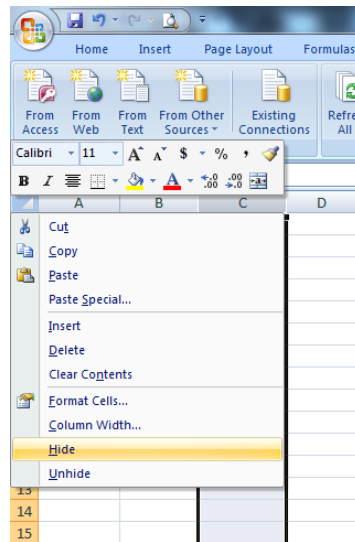
12. **Close** the workbook without saving these changes.

**Do This!**

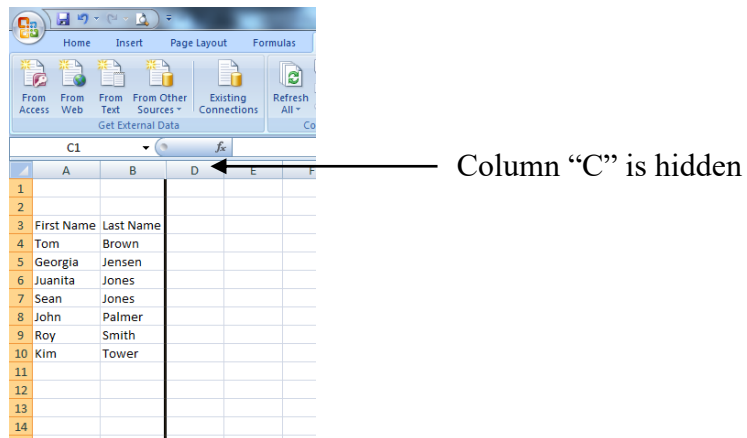
III. **Hiding Columns (Temporarily):**

1. **Open** the **Class List** workbook.
2. Right-click the column **C** header to select the column.

### 3. Select Hide.

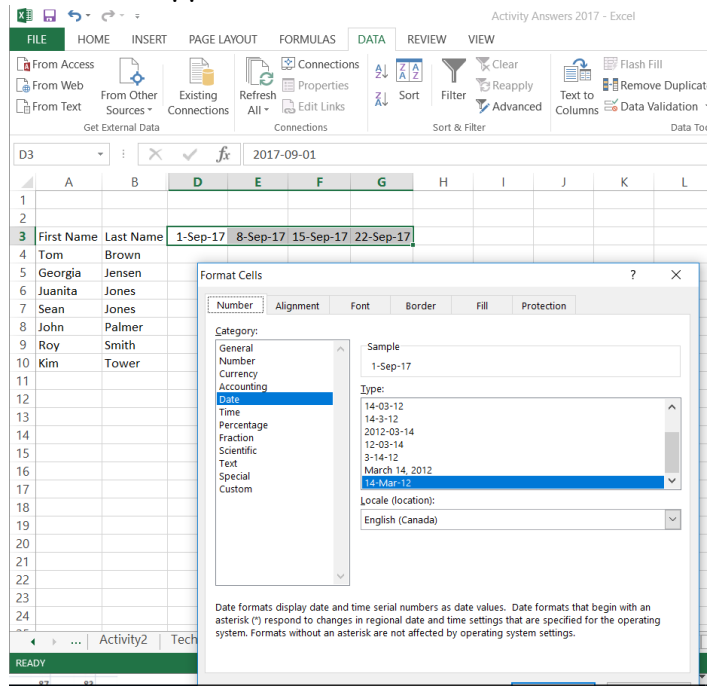


### 4. Your screen should look similar to this:



(Note: to **unhide** Column C, you would select Column headers B and D, right-click and **Unhide**.)

- Enter the following dates starting in **Cell D3** with **1-Sep-2017**. If this format does not appear when you are done, select the **Cells D3 through G3** and format cells as **Date** to appear as **14-Mar-12**, etc.



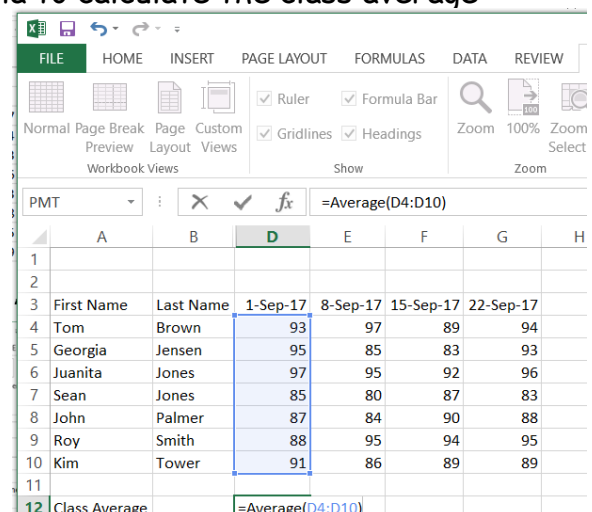
- Now enter the following test scores for each student:

	A	B	D	E	F	G
1						
2						
3	First Name	Last Name	1-Sep-17	8-Sep-17	15-Sep-17	22-Sep-17
4	Tom	Brown	93	97	89	94
5	Georgia	Jensen	95	85	83	93
6	Juanita	Jones	97	95	92	96
7	Sean	Jones	85	80	87	83
8	John	Palmer	87	84	90	88
9	Roy	Smith	88	95	94	95
10	Kim	Tower	91	86	89	89

- Click **Cell A12** and type **Class Average** and hit **ENTER**. Adjust proper width.

- Click **Cell D12** and type the following formula to calculate the class average for the first test on September 1,

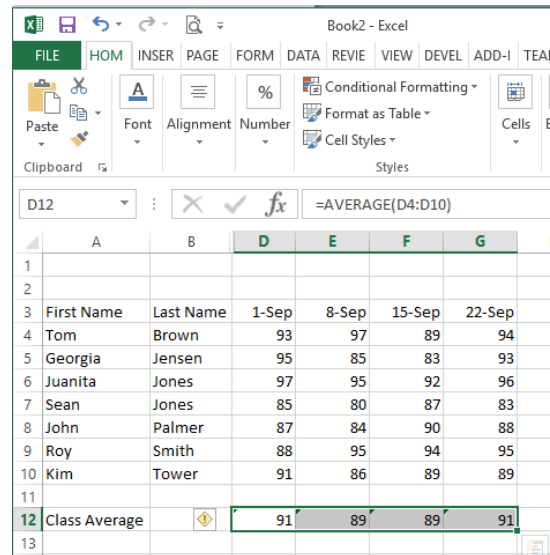
the average of Column D:  
**=average(D4:D10)**



9. Hit **ENTER**. The average should be 90.85714.

10. Drag the **Fill Handle** from **Cell D12** through **Cell G12** to copy this formula for the remaining test score columns.

10. With **Cells D12 through G12** still selected, right- click in the selected area to format the cells. Select **Number, 0 decimals**. Your workbook should look like this:



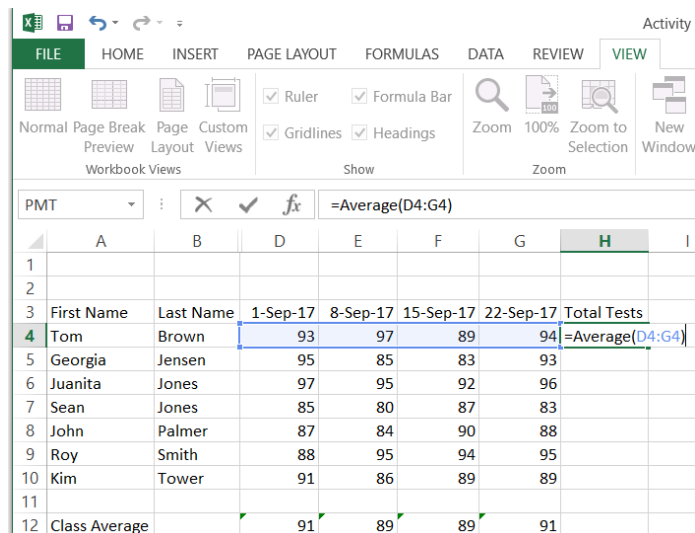
11. **Quick Save** your worksheet from the **Quick Access Bar**.



12. Click **Cell H3** and type, **Total Tests**, and hit **ENTER**. Adjust proper width.

13. In **Cell H4** type the following formula to get the average mark for this student (average of row 4):

**=average(d4:g4)** and hit **ENTER**.





14. Copy this formula, using the fill handle in Cell H4 through to Cell H10 to get the averages for all students. Copy this formula to Cell H12 as well!

15. Format the marks so that they are Number with 0 Decimals.

16. Your screen should look like this:

	A	B	D	E	F	G	H
1							
2							
3	First Name	Last Name	1-Sep-17	8-Sep-17	15-Sep-17	22-Sep-17	Total Tests
4	Tom	Brown	93	97	89	94	93
5	Georgia	Jensen	95	85	83	93	89
6	Juanita	Jones	97	95	92	96	95
7	Sean	Jones	85	80	87	83	84
8	John	Palmer	87	84	90	88	87
9	Roy	Smith	88	95	94	95	93
10	Kim	Tower	91	86	89	89	89
11							
12	Class Average		91	89	89	91	90

17. Save this completed worksheet in your documents as: *Class List 2*.

**Do This:**

Unit 4 Exercise: SAVE, do not print.

Show the finished worksheet to your teacher

1. Open the workbook, *Class List 2*.
2. Right-click on **Column Header B** and **Hide**.
3. Right-click on **Column Header H** and select **Delete** to delete the column.
4. Starting in **Cell H3**, enter the following dates and test scores.

29-Sep-17	6-Oct-17	13-Oct-17	20-Oct-17
88	92	93	95
87	85	91	90
91	93	98	99
88	84	82	90
86	82	91	92
91	85	90	93
90	94	88	96

5. Format the dates from **Cells H3 to K3** to match the **Cells D3 through G3**.
6. Place your cursor **between each column header** and double-click to adjust the width of each column to fit the contents.
7. Click in **Cell L3** and type, **Total Tests**. Adjust the column width in the column headers.
8. Click in **Cell L4** and type the formula to get the average mark for this student (Tom).
9. **Quick Save** this worksheet from the Quick Access Bar.
10. Click in **Cell L4** and **drag the fill handle to Cell L10** to copy the average formula for each student.
11. With **Cell L4 to Cell L10** still selected, **Format** this column to **Number with 0 decimals**.
12. Click in **Cell G12** and **drag the fill handle to Cell L12** to copy the class average formula.
13. **Click and drag from Cell D3 through to Cell L3** to select the cells and **Bold** the column headings.
14. Click in **A14** and type **your name**.
15. **Save** this worksheet in your server folder as: **Activity Four**.

## Unit Four

### Review Questions

1. All formulas start with the + sign in a cell.
  - a. True
  - b. False

2. When you enter a formula and press ENTER, the result appears in the cell, and the formula is displayed in the Formula box.
  - a. True
  - b. False
  
3. When you perform a sort, the data can be sorted in either ascending or descending order.
  - a. True
  - b. False
  
4. When you "hide" a column, you permanently delete it from the workbook.
  - a. True
  - b. False
  
5. To format the date after selecting a cell or cells, you do this:
  - a. Select Tools ribbon, Customize, Options, Date
  - b. Select Format ribbon, Column, AutoFit Selection
  - c. Right-click, Format Cells, Date
  - d. Select Format ribbon, Style, OK.