

Excel 2013

CSCI 1101
Introduction to Computing

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Introduction

Excel 2013 is a spreadsheet program that allows you to store, organize, and analyze information.

Excel files are called workbooks. Whenever you start a new project in Excel, you'll need to create a new workbook.

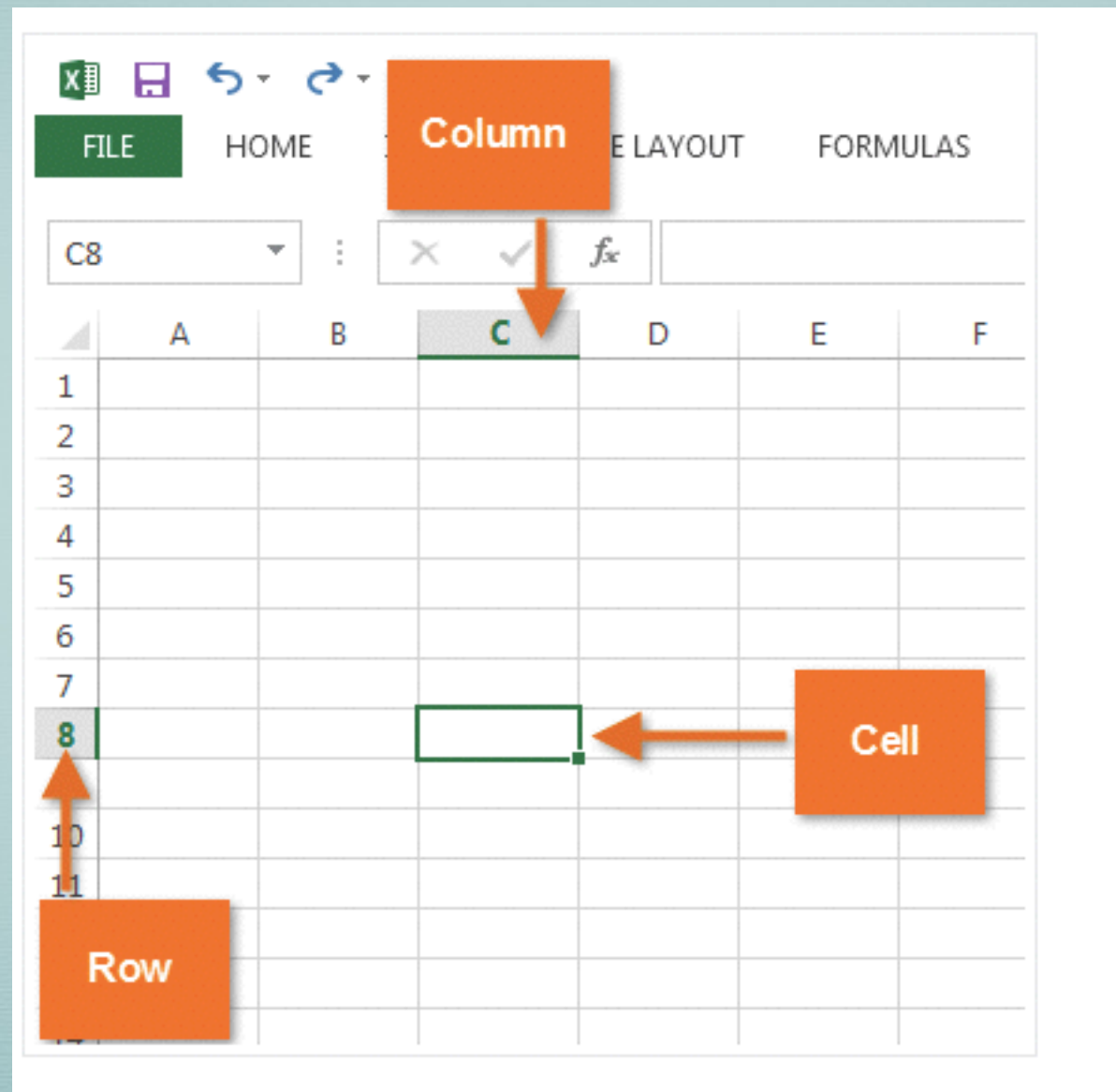
Understanding cells

Every worksheet is made up of thousands of rectangles, which are called **cells**.

A cell is the **intersection** of a row and a column.

Columns are identified by letters (A, B, C), while **rows** are identified by numbers (1, 2, 3).

Understanding cells



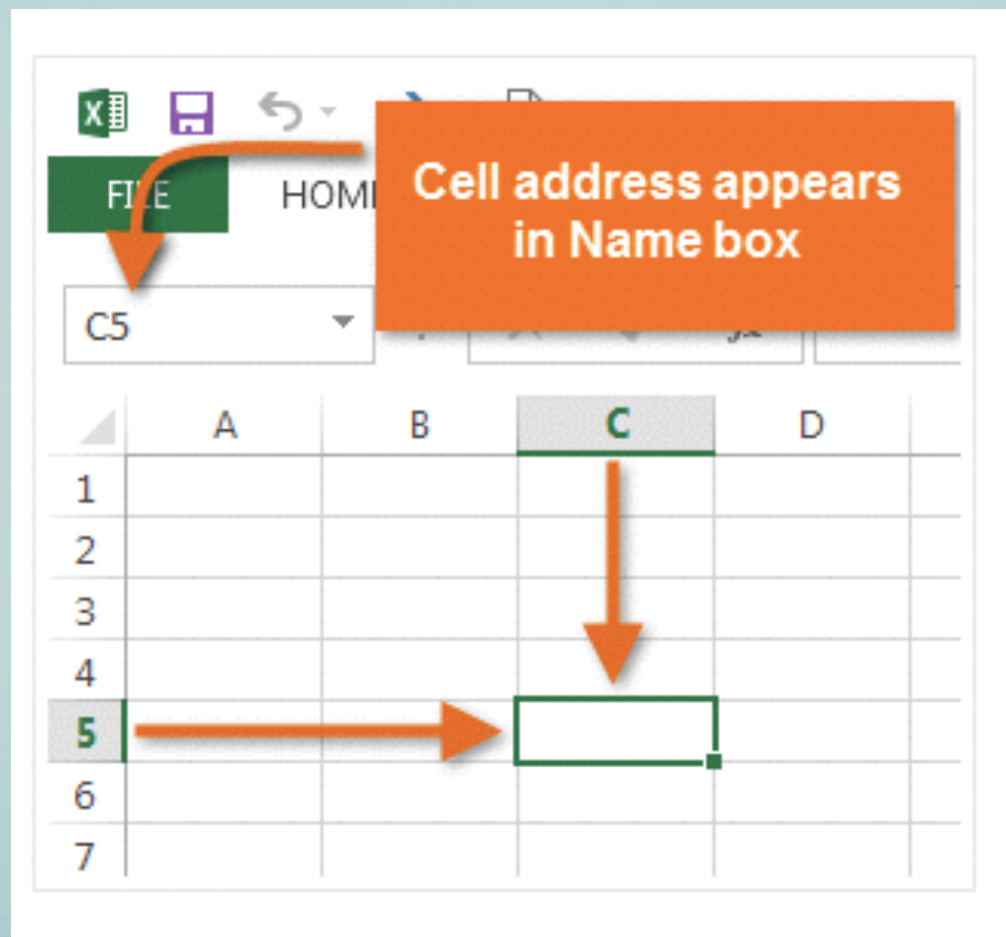
Understanding cells

Each cell has its own name, or **cell address**, based on its column and row.

In the following example, the selected cell intersects column C and row 5, so the cell address is **C5**.

The cell address will also appear in the **Name box**. Note that a cell's **column** and **row headings** are **highlighted** when the cell is selected.

Understanding cells



Understanding cells

You can also select **multiple cells** at the same time. A group of cells is known as a **cell range**.

Rather than a single cell address, you will refer to a cell range using the cell addresses of the **first** and **last** cells in the cell range, separated by a **colon**.

For example, a cell range that included cells A1, A2, A3, A4, and A5 would be written as **A1:A5**.

Understanding cells

- Cell range **A1:A8**

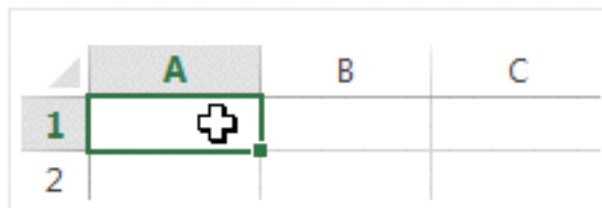
A1		⋮	✕	✓
	A	B	C	
1				
2				
3				
4				
5				
6				
7				
8				
9				

- Cell range **A1:B8**

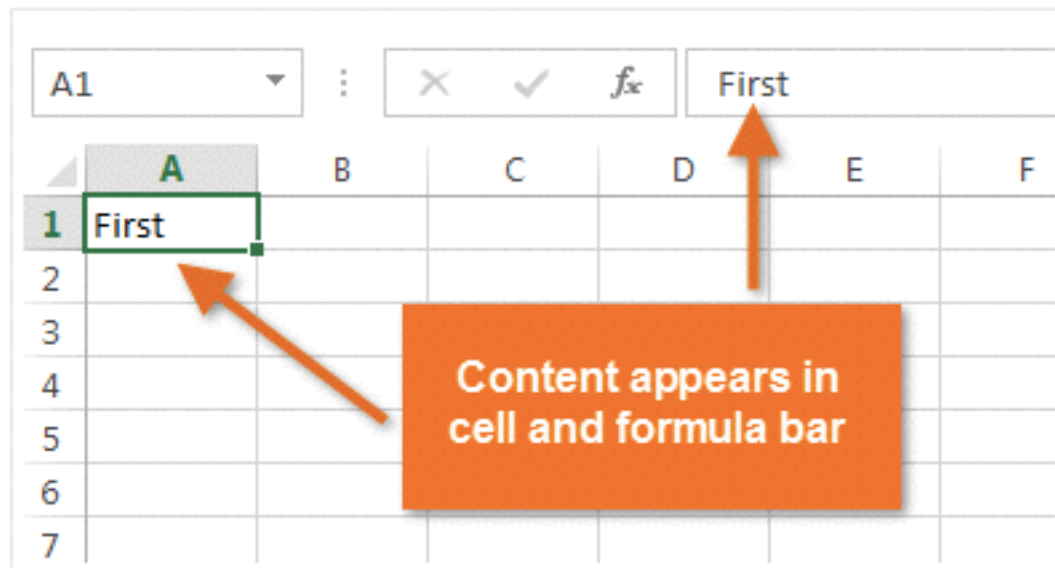
A1		⋮	✕	✓
	A	B	C	
1				
2				
3				
4				
5				
6				
7				
8				
9				

To insert content

1. Click a **cell** to select it.



2. Type **content** into the selected cell, then press **Enter** on your keyboard. The content will appear in the **cell** and the **formula bar**. You can also input and edit cell content in the formula bar.



To delete cells

There is an important difference between deleting the content of a cell and deleting the cell itself.

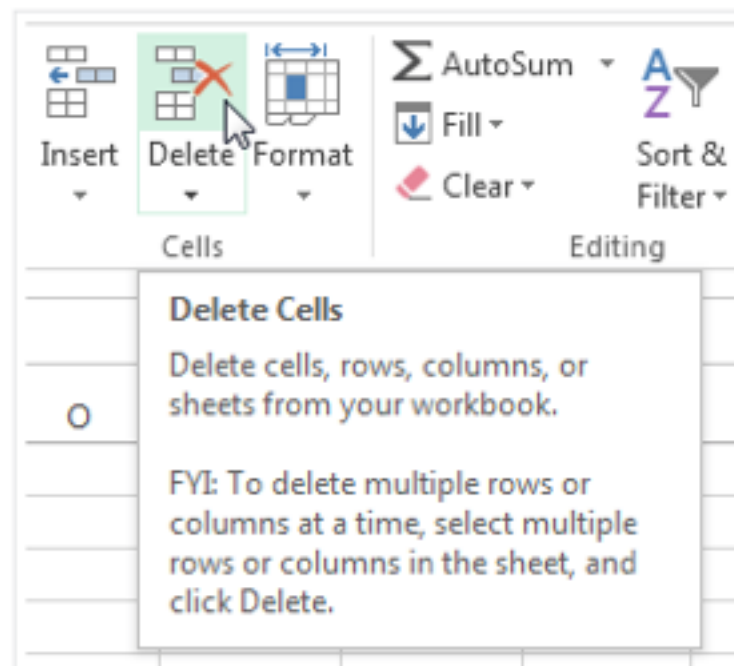
If you **delete the entire cell**, the cells below it will **shift up** and replace the deleted cells.

To delete cells

1. Select the **cell(s)** you wish to delete.

	A	B	C
1			
2	First Name	Middle Name	Last Name
3	Heidi	Joy	Lee
4	Josie	Marie	Gates
5	Wendy	Anne	Crocker
6	Loretta	Susan	Johnson

2. Select the **Delete** command from the **Home** tab on the **Ribbon**.

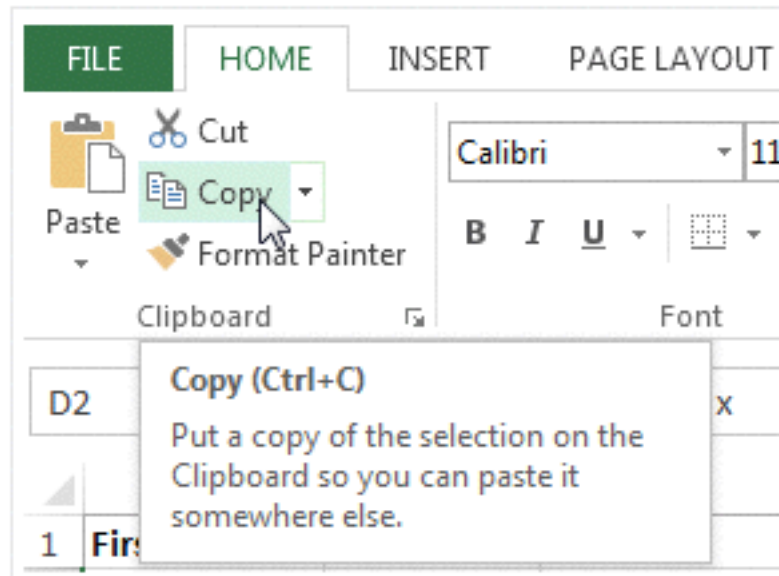


To copy and paste cell content

1. Select the **cell(s)** you wish to **copy**.

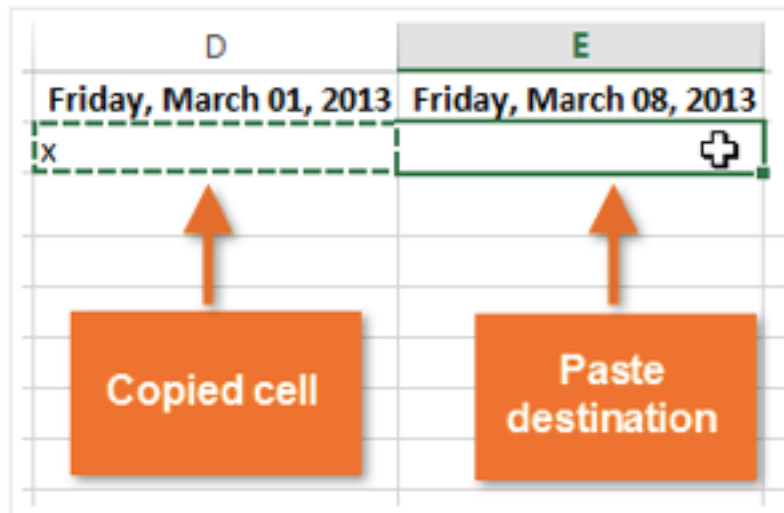
D	E
Friday, March 01, 2013	Friday, March 08, 2013
x	

2. Click the **Copy** command on the **Home** tab, or press **Ctrl+C** on your keyboard.

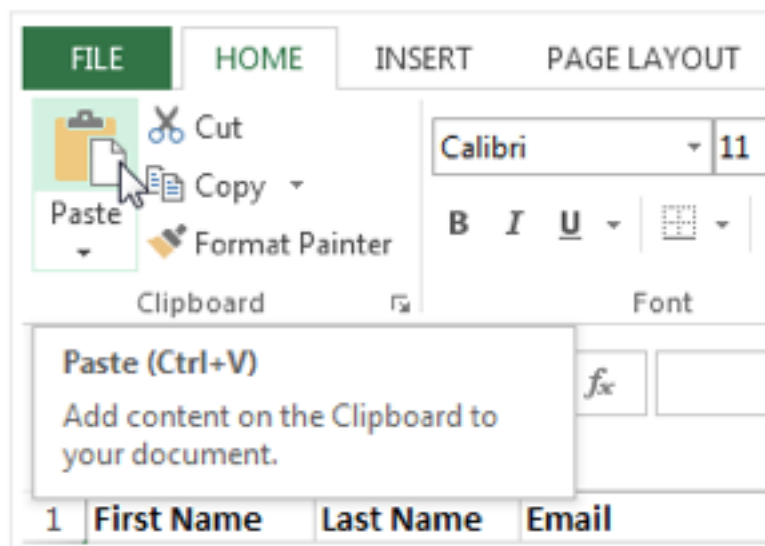


To copy and paste cell content

3. Select the **cell(s)** where you wish to **paste** the content. The copied cells will now have a **dashed box** around them.

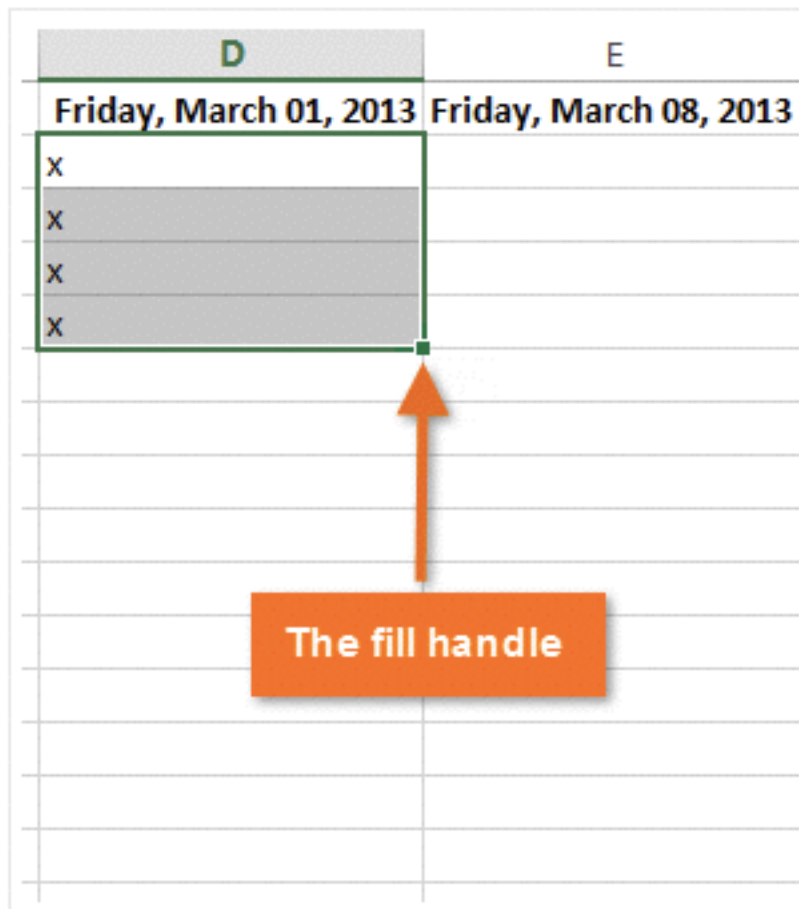


4. Click the **Paste** command on the **Home** tab, or press **Ctrl+V** on your keyboard.



To use the fill handle

1. Select the **cell(s)** containing the content you wish to use. The **fill handle** will appear as a small square in the bottom-right corner of the selected cell(s).



The image shows a portion of an Excel spreadsheet. Column D is highlighted in grey and contains the text 'Friday, March 01, 2013' in the first row, followed by four rows containing 'X'. Column E is also highlighted in grey and contains the text 'Friday, March 08, 2013' in the first row. A green border highlights the range of cells from D1 to D5. A small black square, the fill handle, is located at the bottom-right corner of this range (cell D5). An orange arrow points from a text box labeled 'The fill handle' to this small square.

D	E
Friday, March 01, 2013	Friday, March 08, 2013
X	
X	
X	
X	

To use the fill handle

2. Click, hold, and drag the **fill handle** until all of the cells you wish to fill are **selected**.

[illegible]

To use the fill handle

3. Release the mouse to **fill** the selected cells.

D	E
Friday, March 01, 2013	Friday, March 08, 2013
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	





Modifying Columns, Rows, and Cells

By default, every row and column of a new workbook is always set to the **same height and width**.





Excel allows you to **modify** column width and row height in different ways, including wrapping text and merging cells.

To AutoFit column width

1. Position the mouse over the **column line** in the **column heading** so the **white cross**  becomes a **double arrow** .

D1	:				Cell Phone		
	A	B	C	D 	E	F	G
1	First Name	Last Name	Position(s)	Cell Ph	Street Address		
2	Amanda	Ryan	Pitcher, Sec	513-555	800 Round Table Drive		
3	Tricia	Matthews	Catcher	808-555	4721 Arron Smith Drive		
4	Josefina	Woodard	Outfield	714-555	2152 Liberty Avenue		

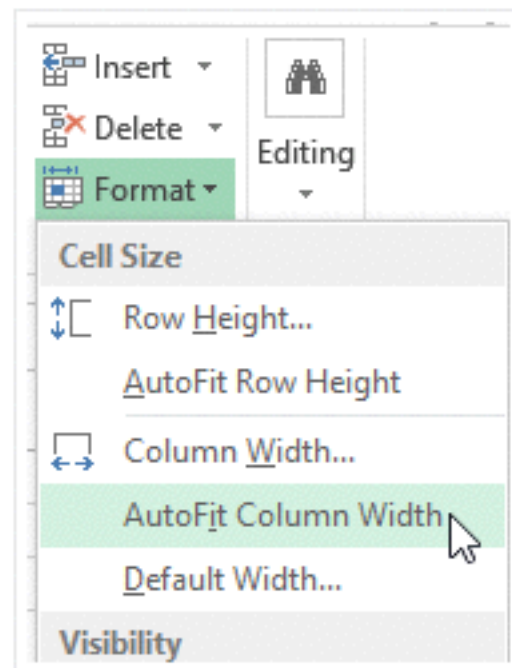
2. Double-click the mouse. The **column width** will be changed automatically to fit the content.

D1	:				Cell Phone		
	A	B	C	D 	E	F	
1	First Name	Last Name	Position(s)	Cell Phone	Street Address		
2	Amanda	Ryan	Pitcher, Sec	513-555-4477	800 Round Table Drive		
3	Tricia	Matthews	Catcher	808-555-6397	4721 Arron Smith Drive		
4	Josefina	Woodard	Outfield	714-555-4506	2152 Liberty Avenue		

To AutoFit column width



You can also AutoFit the width for several columns at the same time. Simply select the columns you would like to AutoFit, then select the **AutoFit Column Width** command from the **Format** drop-down menu on the **Home** tab. This method can also be used for **Row height**.



To modify all rows or columns

1. Locate and click the **Select All** button  just below the **formula bar** to select every cell in the worksheet.

H14

A

B

C

D

1

Bull Team Roster: Co-ed Softball 2013

2

First Name

Last Name

Cell Phone

Street Address

3

Amanda

Ryan

513-555-4477

800 Round Table Drive

4

Tricia

Matthews

808-555-6397

4721 Arron Smith Drive

5

Josefina

Woodard

714-555-4506

2152 Liberty Avenue

6

Rodney

Ross

310-555-8862

3503 Prospect Valley Road

7

Leigh

Dizon

607-555-7816

1483 Frosty Lane

8

Mark

Grant

914-555-5592

1663 Taylor Street

9

Mildred

Persinger

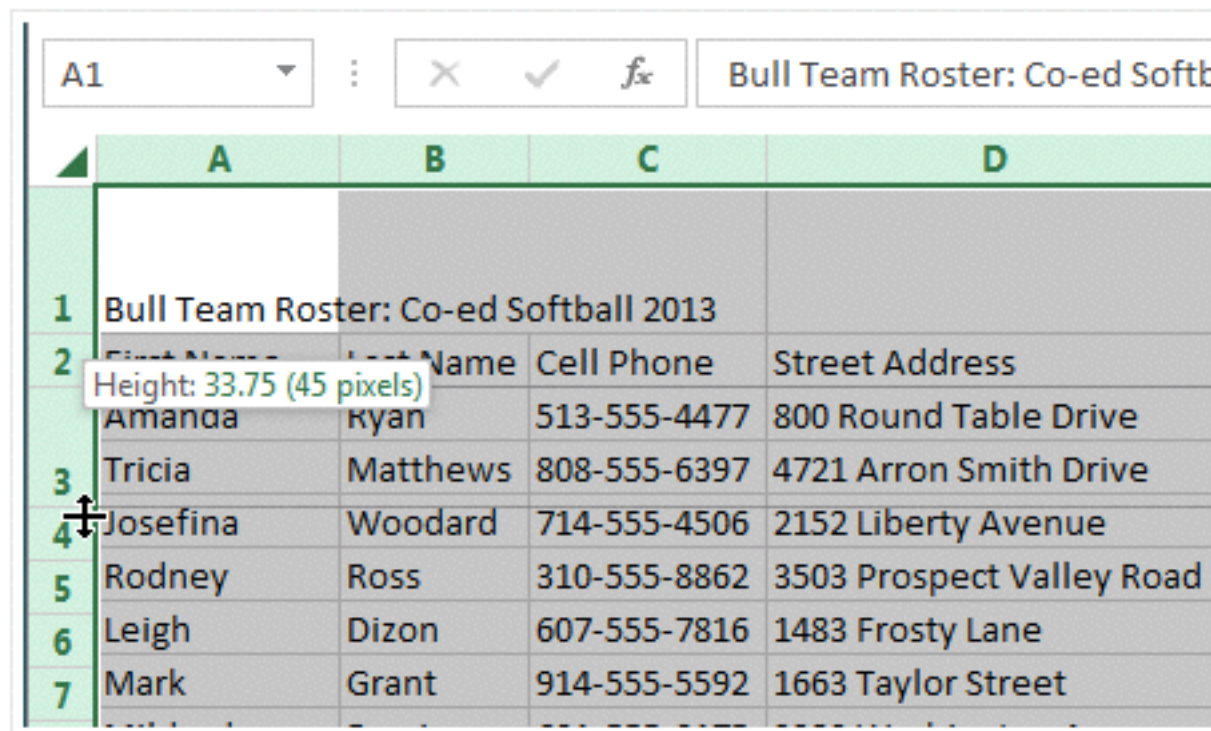
601-555-0175

3329 Washington Avenue

2. Position the mouse over a **row line** so the **white cross**  becomes a **double arrow** .

To modify all rows or columns

3. Click, hold, and drag the mouse to **increase** or **decrease** the row height.



The screenshot shows a spreadsheet window titled "Bull Team Roster: Co-ed Softb". The active cell is A1. A tooltip is visible over the row height adjustment handle, displaying "Height: 33.75 (45 pixels)". The spreadsheet data is as follows:

	A	B	C	D
1	Bull Team Roster: Co-ed Softball 2013			
2	First Name	Last Name	Cell Phone	Street Address
3	Amanda	Ryan	513-555-4477	800 Round Table Drive
4	Tricia	Matthews	808-555-6397	4721 Arron Smith Drive
5	Josefina	Woodard	714-555-4506	2152 Liberty Avenue
6	Rodney	Ross	310-555-8862	3503 Prospect Valley Road
7	Leigh	Dizon	607-555-7816	1483 Frosty Lane
8	Mark	Grant	914-555-5592	1663 Taylor Street

To modify all rows or columns

4. Release the mouse when you are satisfied with the **new row height** for the worksheet.

A1	:	X	✓	<i>fx</i>	Bull Team Roster: Co-ed Softb
	A	B	C	D	
1	Bull Team Roster: Co-ed Softball 2013				
2	First Name	Last Name	Cell Phone	Street Address	
3	Amanda	Ryan	513-555-4477	800 Round Table Drive	
4	Tricia	Matthews	808-555-6397	4721 Arron Smith Drive	
5	Josefina	Woodard	714-555-4506	2152 Liberty Avenue	
6	Rodney	Ross	310-555-8862	3503 Prospect Valley Road	

Relative Cell References

By default, all cell references are **relative references**. When copied across multiple cells, they change based on the relative position of rows and columns.

For example, if you copy the formula `=A1+B1` from row 1 to row 2, the formula will become `=A2+B2`.

Relative references are especially convenient whenever you need to repeat the same calculation across multiple rows or columns.

To create and copy a formula using relative references

1. Select the **cell** that will contain the formula. In our example, we'll select cell **D2**.

D2	:				
	A	B	C	D	E
1	Menu Item	Price	Quantity	Total	
2	Empanadas: Beef Picadillo	\$2.99	15		
3	Empanadas: Chipotle Shrimp	\$3.99	10		
4	Empanadas: Black Bean & Plantain	\$2.49	20		
5	Tamales: Chicken Tinga	\$2.29	20		
6	Tamales: Vegetable	\$2.29	30		
7	Arepas: Carnitas	\$2.89	10		
8	Arepas: Queso Blanco	\$2.49	20		
9	Empanadas: Apple Cinnamon	\$3.19	40		
10	Beverages: Horchata	\$1.89	25		
11	Beverages: Lemonade	\$1.89	35		
12	Beverages: Tamarindo	\$1.89	10		
13	Total				
14					

To create and copy a formula using relative references

2. Enter the **formula** to calculate the desired value. In our example, we'll type **=B2*C2**.

C2	:	✕	✓	<i>fx</i>	=B2*C2
	A	B	C	D	E
1	Menu Item	Price	Quantity	Total	
2	Empanadas: Beef Picadillo	\$2.99	15	=B2*C2	
3	Empanadas: Chipotle Shrimp	\$3.99	10		
4	Empanadas: Black Bean & Plantain	\$2.49	20		
5	Tamales: Chicken Tinga	\$2.29	20		
6	Tamales: Vegetable	\$2.29	30		
7	Arepas: Carnitas	\$2.89	10		
8	Arepas: Queso Blanco	\$2.49	20		
9	Empanadas: Apple Cinnamon	\$3.19	40		
10	Beverages: Horchata	\$1.89	25		
11	Beverages: Lemonade	\$1.89	35		
12	Beverages: Tamarindo	\$1.89	10		
13	Total				
14					

To create and copy a formula using relative references

3. Press **Enter** on your keyboard. The formula will be **calculated**, and the result will be displayed in the cell.
4. Locate the **fill handle** in the lower-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D2**.

D2

=B2*C2

	A	B	C	D	E
1	Menu Item	Price	Quantity	Total	
2	Empanadas: Beef Picadillo	\$2.99	15	\$44.85	
3	Empanadas: Chipotle Shrimp	\$3.99	10		
4	Empanadas: Black Bean & Plantain	\$2.49	20		
5	Tamales: Chicken Tinga	\$2.29	20		
6	Tamales: Vegetable	\$2.29	30		
7	Arepas: Carnitas	\$2.89	10		
8	Arepas: Queso Blanco	\$2.49	20		
9	Empanadas: Apple Cinnamon	\$3.19	40		
10	Beverages: Horchata	\$1.89	25		
11	Beverages: Lemonade	\$1.89	35		
12	Beverages: Tamarindo	\$1.89	10		
13	Total				
14					

The fill handle

To create and copy a formula using relative references

5. Click, hold, and drag the **fill handle** over the cells you wish to fill. In our example, we'll select cells **D3:D12**.



The screenshot shows an Excel spreadsheet with the following data:

	A			
1	Menu Item	Price	Quantity	Total
2	Empanadas: Beef Picadillo	\$2.99	15	\$44.85
3	Empanadas: Chipotle Shrimp	\$3.99	10	
4	Empanadas: Black Bean & Plantain	\$2.49	20	
5	Tamales: Chicken Tinga	\$2.29	20	
6	Tamales: Vegetable	\$2.29	30	
7	Arepas: Carnitas	\$2.89	10	
8	Arepas: Queso Blanco	\$2.49	20	
9	Empanadas: Apple Cinnamon	\$3.19	40	
10	Beverages: Horchata	\$1.89	25	
11	Beverages: Lemonade	\$1.89	35	
12	Beverages: Tamarindo	\$1.89	10	
13	Total			
14				

The formula bar shows the formula $=B2*C2$. An orange callout box with a downward arrow pointing to the fill handle in cell D2 says: "Click, hold and drag the fill handle to copy the formula to adjacent cells".

To create and copy a formula using relative references

6. Release the mouse. The formula will be **copied** to the selected cells with **relative references**, and the values will be calculated in each cell.

D2

:

X

✓

fx

=B2*C2

	A	B	C	D	E
1	Menu Item	Price	Quantity	Total	
2	Empanadas: Beef Picadillo	\$2.99	15	\$44.85	
3	Empanadas: Chipotle Shrimp	\$3.99	10	\$39.90	
4	Empanadas: Black Bean & Plantain	\$2.49	20	\$49.80	
5	Tamales: Chicken Tinga	\$2.29	20	\$45.80	
6	Tamales: Vegetable	\$2.29	30	\$68.70	
7	Arepas: Carnitas	\$2.89	10	\$28.90	
8	Arepas: Queso Blanco	\$2.49	20	\$49.80	
9	Empanadas: Apple Cinnamon	\$3.19	40	\$127.60	
10	Beverages: Horchata	\$1.89	25	\$47.25	
11	Beverages: Lemonade	\$1.89	35	\$66.15	
12	Beverages: Tamarindo	\$1.89	10	\$18.90	
13	Total				
14					

Functions

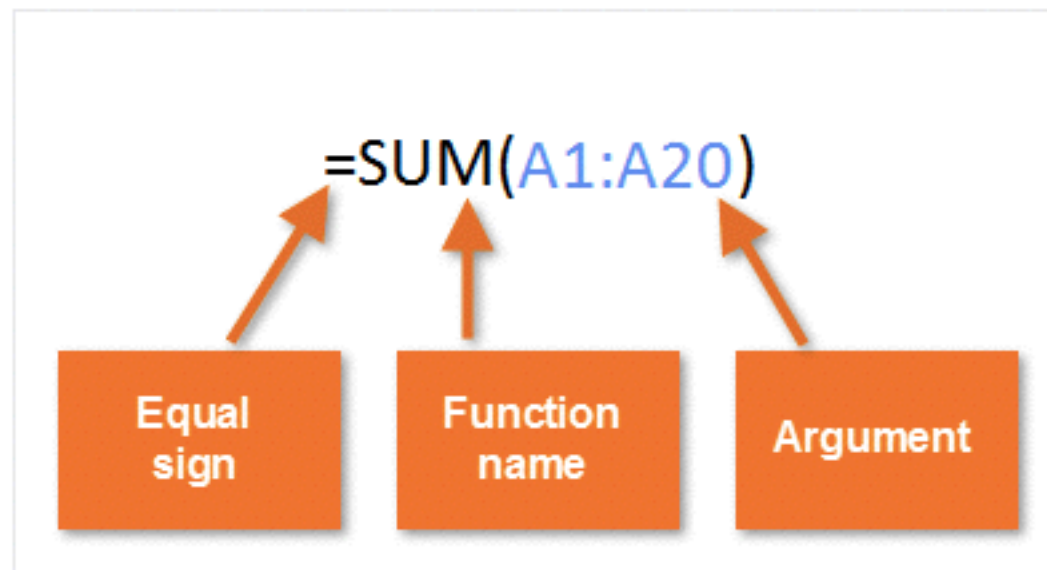
A **function** is a **predefined formula** that performs calculations using specific values in a particular order.

Excel includes many common functions that can be useful for quickly finding the **sum**, **average**, **count**, **maximum** value, and **minimum** value for a range of cells.

In order to use functions correctly, you'll need to understand the different parts of a function and how to create arguments to calculate values.

Functions

In order to work correctly, a function must be written a specific way, which is called the **syntax**. The basic syntax for a function is an **equals sign (=)**, the **function name** (SUM, for example), and one or more **arguments**. Arguments contain the information you want to calculate. The function in the example below would add the values of the cell range A1:A20.



Working with arguments

Arguments can refer to both **individual cells** and **cell ranges** and must be enclosed within **parentheses**. You can include one argument or multiple arguments, depending on the syntax required for the function.

For example, the function **=AVERAGE(B1:B9)** would calculate the **average** of the values in the cell range B1:B9. This function contains only one argument.

COUNTA	:	X	✓	<i>fx</i>	=AVERAGE(B1:B9)
	A	B	C		
1		5			
2		8			
3		9			
4		7			
5		5			
6		1			
7		3			
8		2			
9		7			
10		=AVERAGE(B1:B9)			
11					

Working with arguments

Multiple arguments must be separated by a **comma**. For example, the function **=SUM(A1:A3, C1:C2, E1)** will add the values of all the cells in the three arguments.

COUNTA

⌵

⋮

✖

✓

f_x

=SUM(A1:A3,C1:C2,E1)

	A	B	C	D	E	F
1	7		5		15	
2	4		12			
3	23					
4						
5	=SUM(A1:A3,C1:C2,E1)					
6						