

Lecture 4, 5.

Cell References and Equations, Functions and Names

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Relative Cell Reference

- Excel can reference other cells within another cell
- The default cell reference.
- If you copy and paste the reference cell (or use the fill tool), the new referenced cell will be the same row and/or column distance away.

	A	B	C	D	E	F
1	Prices			Prices		
2	2018	\$ 3.99		2018	2019	2020
3	2019	\$ 4.99		=B2		
4	2020	\$ 5.25				

	A	B	C	D	E	F
1	Prices			Prices		
2	2018	3.99		2018	2019	2020
3	2019	4.99		=B2	=C2	
4	2020	5.25				

	A	B	C	D	E	F
1	Prices			Prices		
2	2018	\$3.99		2018	2019	2020
3	2019	\$4.99		\$3.99	\$-	
4	2020	\$5.25				

Absolute Cell Reference

- Locks a particular aspect of the reference: row, column or both.
- Windows users can hit F4 to create an absolute reference; MAC users can hit Apple + T
- Or manually enter a \$ before the letter (column), before the number (row), or both (column and row).

	A	B	C	D	E	F
1	Prices			Prices		
2	2018	3.99		2018	2019	2020
3	2019	4.99		=B2	=B2	
4	2020	5.25		=B3		
5				=B4		

	A	B	C	D	E	F
1	Prices			Prices		
2	2018	\$ 3.99		2018	2019	2020
3	2019	\$ 4.99		\$ 3.99	\$ 3.99	
4	2020	\$ 5.25		\$ 4.99		
5				\$ 5.25		

Equations

- Excel is basically a giant calculator.
- Inputs can be either references or actual values.

For example: = 1+2+3

Or: = A1+A2+A3

Don't forget:

P-E-M-D-A-S!

	A	B
1	1	
2	2	
3	3	
4	=A1+A2+A3	
5		

	A
1	1
2	2
3	3
4	=A1+A2+A3
5	=1+2+3
6	

	A
1	1
2	2
3	3
4	6
5	6
6	

Equations Hints

Math Symbols in Excel

Parenthesis	()
Exponent	^
Multiply	*
Divide	/
Add	+
Subtract	-
Equal	=
Greater than	>
Greater than or Equal to	>=
Less than	<
Less than or Equal to	<=
Join	&

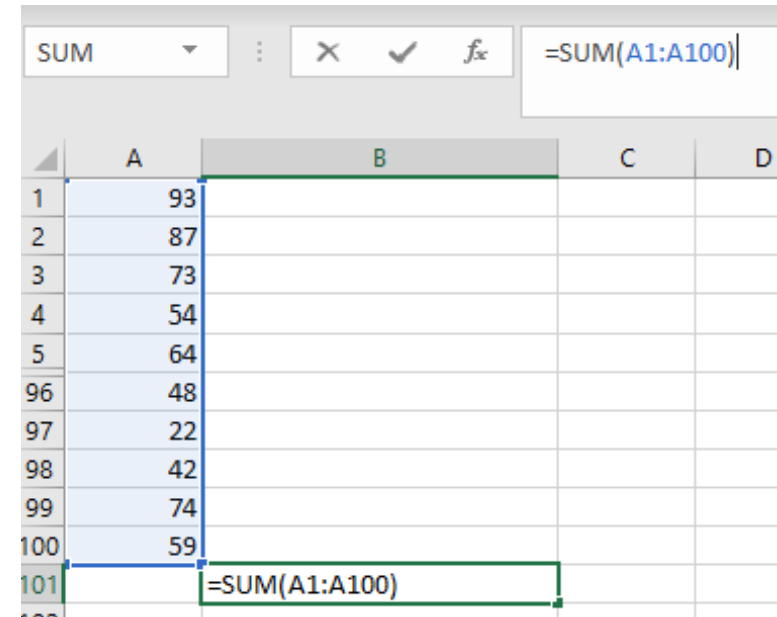
Functions

- Excel has built-in equations or logic structures to simplify processes.
- Often faster than creating an equation.
- Note: must fill in required parts of the function for it to work.

For example: =A1+A2+...+A100

can easily be shortened to: =SUM(A1:A100)

- Some other useful functions:
(AVG, MODE, MAX, MIN, CONCAT, etc.)

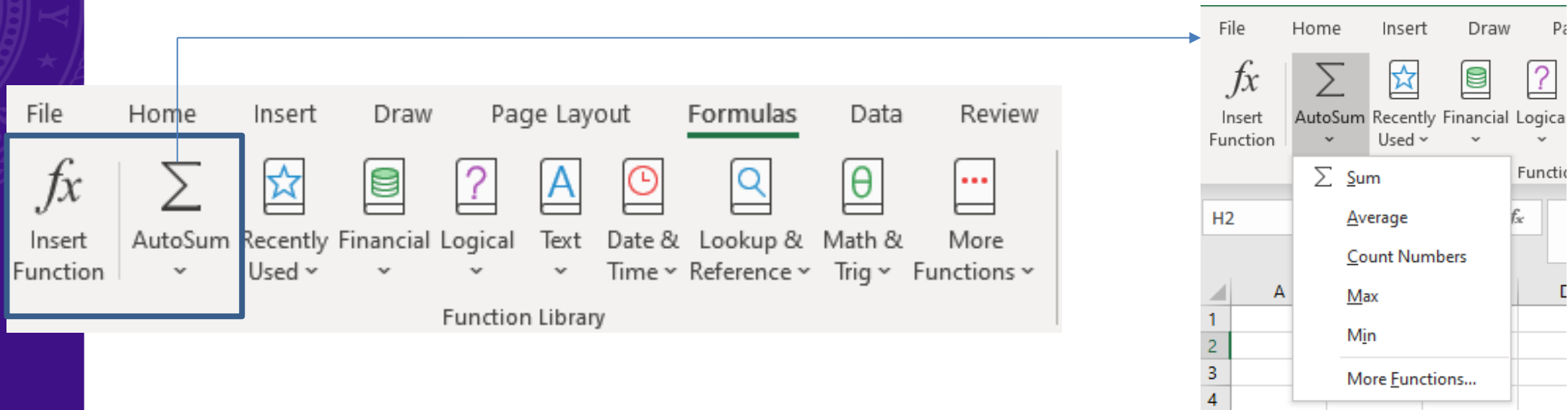


The screenshot shows an Excel spreadsheet with columns A, B, C, and D. Column A contains values from row 1 to 100. Row 101 is highlighted, and the formula bar shows the formula =SUM(A1:A100). The formula bar also displays the function name SUM and the range A1:A100.

	A	B	C	D
1	93			
2	87			
3	73			
4	54			
5	64			
96	48			
97	22			
98	42			
99	74			
100	59			
101		=SUM(A1:A100)		

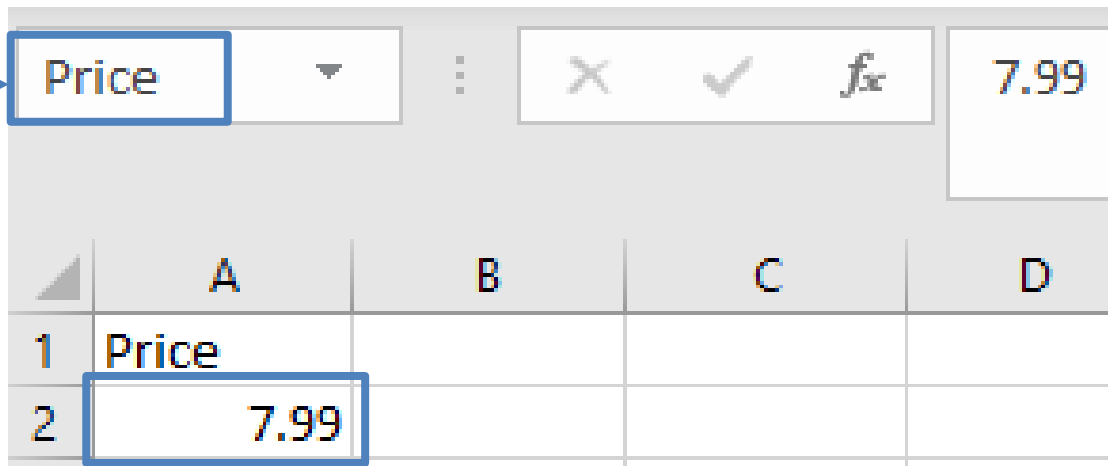
Functions

- Other built-in functions/formulas. Formulas -> Insert Function OR AutoSum.



Names

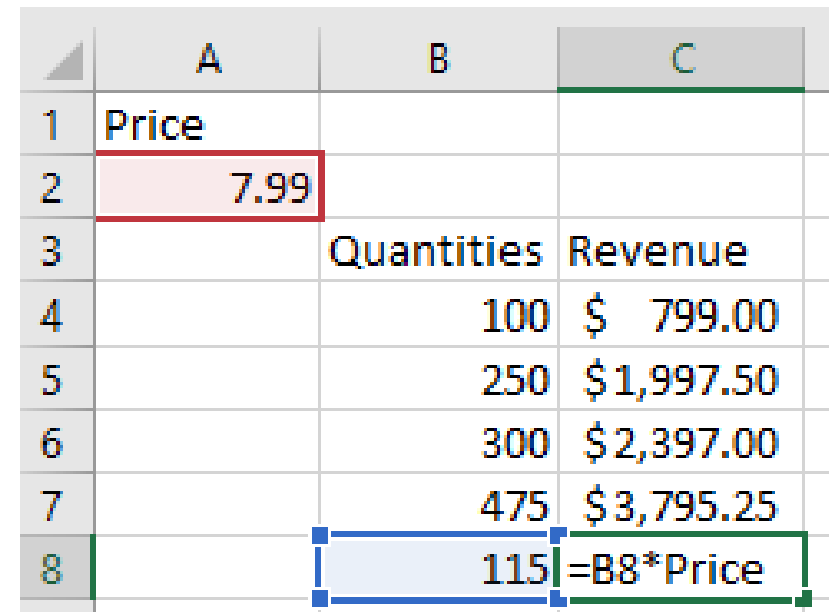
- Rather than work in alphanumeric reference in Excel, the program allows you to identify cells and arrays in your own way.
- Instead of referencing “A2” for price, you can simply rename A2 “Price” in the formula bar. Then you can just refer to Price for future calculations and/or references.



The image shows the Excel Name Manager and a worksheet. In the Name Manager, a name 'Price' is defined for cell A2, with a value of 7.99. The worksheet shows cell A2 containing 'Price' and cell B2 containing '7.99'.

	A	B	C	D
1	Price			
2	7.99			

Cell A2

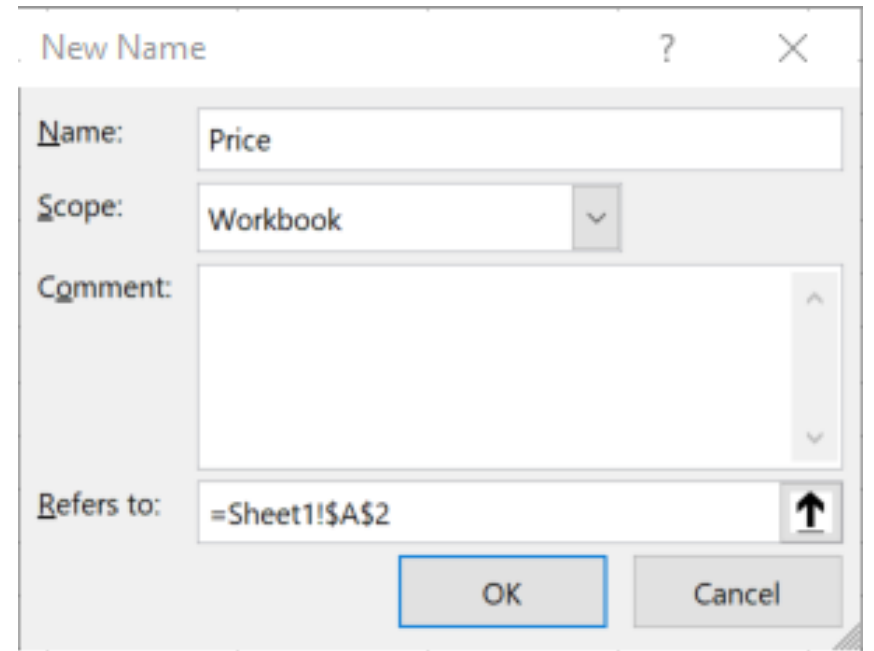
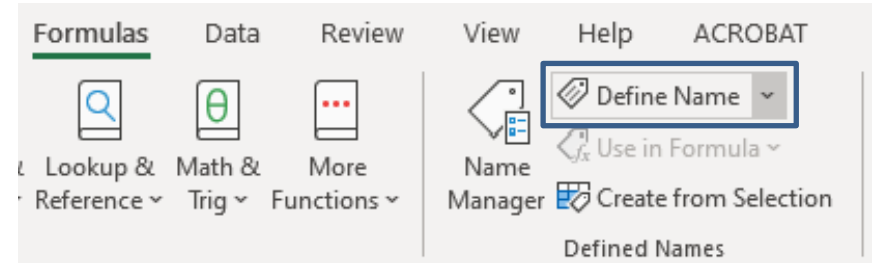


The image shows an Excel worksheet with columns A, B, and C. Row 1 has 'Price' in A. Row 2 has '7.99' in B. Row 3 has 'Quantities' in B and 'Revenue' in C. Rows 4-7 show data for quantities 100, 250, 300, and 475 with corresponding revenue values. Row 8 shows a quantity of 115 and a formula '=B8*Price' in C.

	A	B	C
1	Price		
2	7.99		
3		Quantities	Revenue
4		100	\$ 799.00
5		250	\$1,997.50
6		300	\$2,397.00
7		475	\$3,795.25
8		115	=B8*Price

Names | Alternative

- Go to: Formulas -> Define Name (under the defined names section).
- Typically, the scope should be the entire workbook.
- Refers to should include the cell/array reference you are naming.





AGEC 115: Decision Tools for Ag Economics and Agribusiness

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