



Excel : Functions and Formulas

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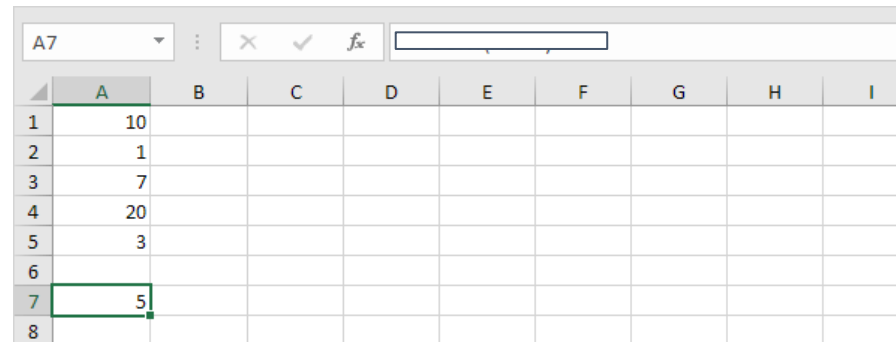
What will we learn Today?

We will view the following Functions today:

- Count and Sum
- Logical
- Cell References
- Date and Time
- Text

Problem Statement

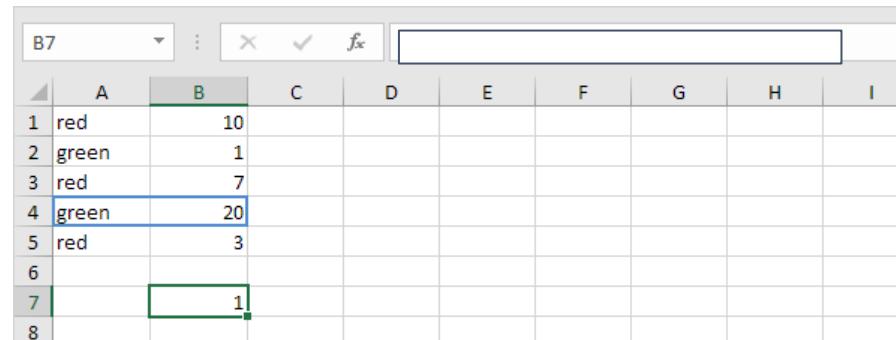
Count the number of cells that contain numbers.



An Excel spreadsheet with columns A through I and rows 1 through 8. The active cell is A7, which contains the number 5. The formula bar shows a blank formula. The spreadsheet contains the following data:

	A	B	C	D	E	F	G	H	I
1	10								
2	1								
3	7								
4	20								
5	3								
6									
7	5								
8									

Count green with greater than 9

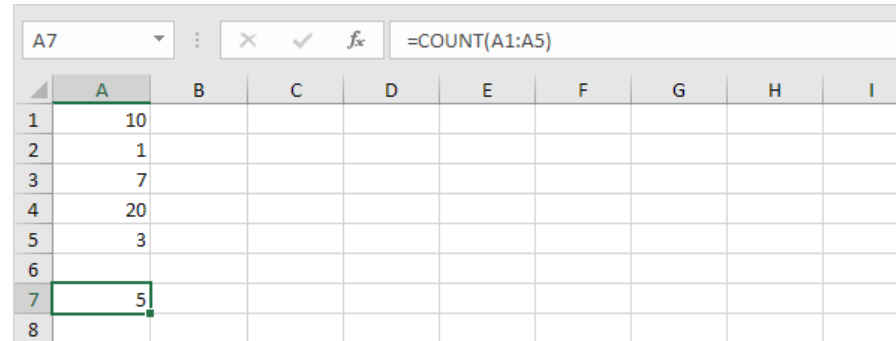


An Excel spreadsheet with columns A through I and rows 1 through 8. The active cell is B7, which contains the number 1. The formula bar shows a blank formula. The spreadsheet contains the following data:

	A	B	C	D	E	F	G	H	I
1	red	10							
2	green	1							
3	red	7							
4	green	20							
5	red	3							
6									
7		1							
8									

Let The Countdown begun

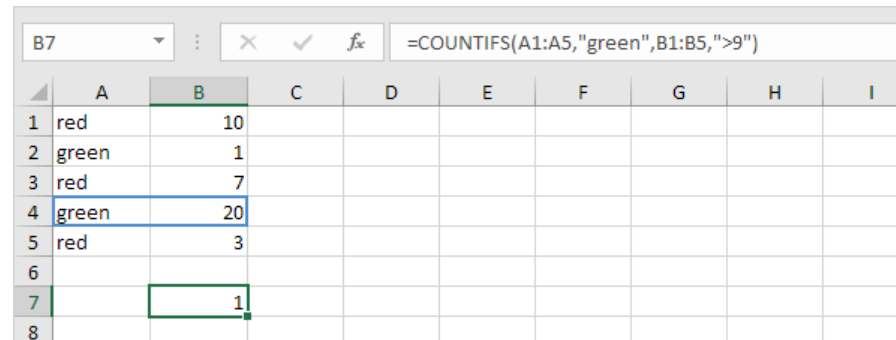
To count the number of cells that contain numbers, use the COUNT function



The screenshot shows an Excel spreadsheet with a formula bar at the top displaying `=COUNT(A1:A5)`. The active cell is A7, which contains the value 5. The spreadsheet has columns A through I and rows 1 through 8. The data in column A is as follows:

	A	B	C	D	E	F	G	H	I
1	10								
2	1								
3	7								
4	20								
5	3								
6									
7	5								
8									

To count cells based on one criteria, use the following COUNTIF function

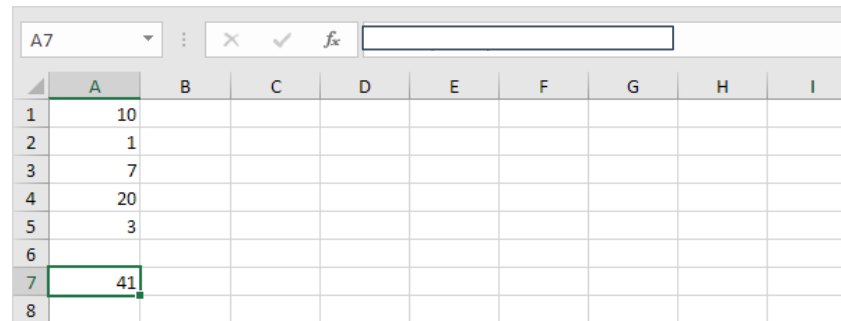


The screenshot shows an Excel spreadsheet with a formula bar at the top displaying `=COUNTIFS(A1:A5,"green",B1:B5,">9")`. The active cell is B7, which contains the value 1. The spreadsheet has columns A through I and rows 1 through 8. The data in columns A and B is as follows:

	A	B	C	D	E	F	G	H	I
1	red	10							
2	green	1							
3	red	7							
4	green	20							
5	red	3							
6									
7		1							
8									

Problem Statement

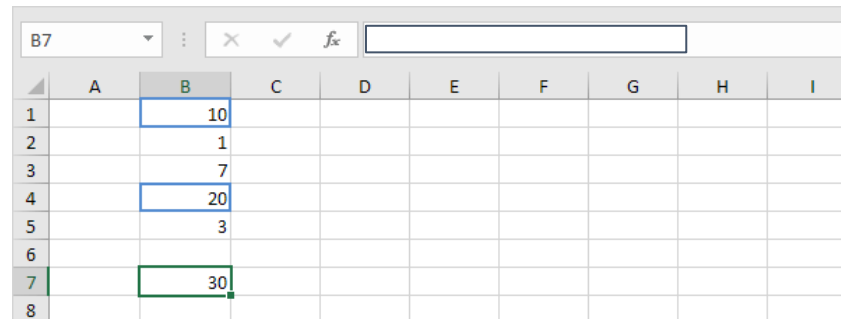
Sum all the numbers in the column



An Excel spreadsheet with columns A through I and rows 1 through 8. Column A contains the values 10, 1, 7, 20, 3, and 41 in rows 1 through 7 respectively. Cell A7 is selected, and the formula bar shows the SUM formula: `=SUM(A1:A6)`.

	A	B	C	D	E	F	G	H	I
1	10								
2	1								
3	7								
4	20								
5	3								
6									
7	41								
8									

Sum all the numbers greater than 9

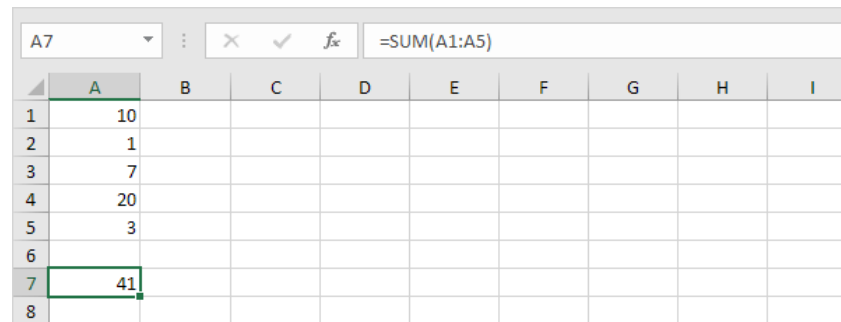


An Excel spreadsheet with columns A through I and rows 1 through 8. Column A contains the values 10, 1, 7, 20, 3, and 30 in rows 1 through 7 respectively. Cell B7 is selected, and the formula bar shows the SUMIF formula: `=SUMIF(A1:A6, >9)`.

	A	B	C	D	E	F	G	H	I
1	10								
2	1								
3	7								
4	20								
5	3								
6									
7	30								
8									

$$3 + 1 = 4$$

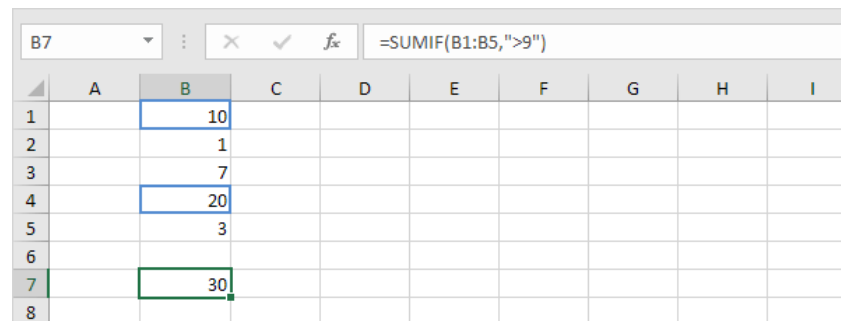
To sum a range of cells, use the SUM function



An Excel spreadsheet showing a sum calculation. The formula bar at the top displays `=SUM(A1:A5)`. The spreadsheet has columns A through I and rows 1 through 8. Column A contains the values 10, 1, 7, 20, and 3 in rows 1 through 5 respectively. Cell A7 contains the result 41, which is the sum of the values in A1 through A5. The cell A7 is highlighted with a green border.

	A	B	C	D	E	F	G	H	I
1	10								
2	1								
3	7								
4	20								
5	3								
6									
7	41								
8									

To sum cells based on one criteria, use the following SUMIF function



An Excel spreadsheet showing a conditional sum calculation. The formula bar at the top displays `=SUMIF(B1:B5,">9")`. The spreadsheet has columns A through I and rows 1 through 8. Column B contains the values 10, 1, 7, 20, and 3 in rows 1 through 5 respectively. Cell B7 contains the result 30, which is the sum of the values in B1 through B5 that are greater than 9 (10 and 20). The cell B7 is highlighted with a green border.

	A	B	C	D	E	F	G	H	I
1		10							
2		1							
3		7							
4		20							
5		3							
6									
7		30							
8									

Let's be logical

The IF function checks whether a condition is met, and returns one value if true and another value if false

C2									
	A	B	C	D	E	F	G	H	I
1	Name	Score	Result						
2	Richard	93	Pass						
3	Jennifer	60	Pass						
4	James	58	Fail						
5	Lisa	79	Pass						
6	Sharon	41	Fail						
7									

The AND Function returns TRUE if all conditions are true and returns FALSE if any of the conditions are false

D2									
	A	B	C	D	E	F	G	H	I
1	Name	Score 1	Score 2	Result					
2	Richard	93	80	FALSE					
3	Jennifer	60	91	TRUE					
4	James	58	75	FALSE					
5	Lisa	79	94	TRUE					
6	Sharon	41	33	FALSE					
7									

Let's be logical

The OR function returns TRUE if any of the conditions are TRUE and returns FALSE if all conditions are false

D2				fx		=OR(B2>=60,C2>=60)			
	A	B	C	D	E	F	G	H	I
1	Name	Score 1	Score 2	Result					
2	Richard	93	80	TRUE					
3	Jennifer	60	91	TRUE					
4	James	58	75	TRUE					
5	Lisa	79	94	TRUE					
6	Sharon	41	33	FALSE					
7									

The NOT function changes TRUE to FALSE, and FALSE to TRUE

D2				fx		=NOT(OR(B2>=60,C2>=60))			
	A	B	C	D	E	F	G	H	I
1	Name	Score 1	Score 2	Result					
2	Richard	93	80	FALSE					
3	Jennifer	60	91	FALSE					
4	James	58	75	FALSE					
5	Lisa	79	94	FALSE					
6	Sharon	41	33	TRUE					
7									

Let's test our learning

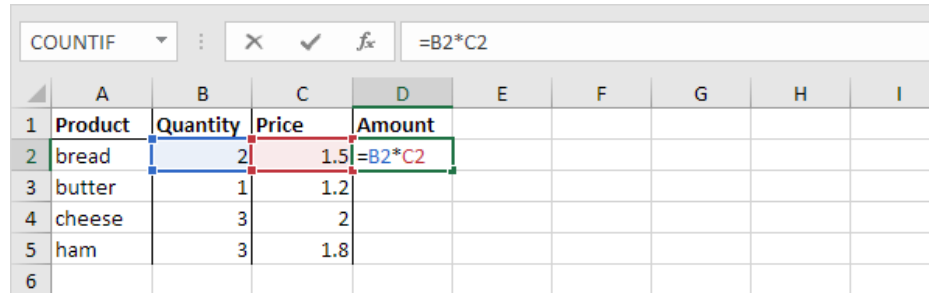
In exercise sheet, doing the following

1. Sum and count the prices less than 500
2. Check the status for “canceled” or “order-refund”

Any Questions

For Your Reference

By default, Excel uses relative references. See the formula in cell D2 below. Cell D2 references (points to) cell B2 and cell C2. Both references are relative

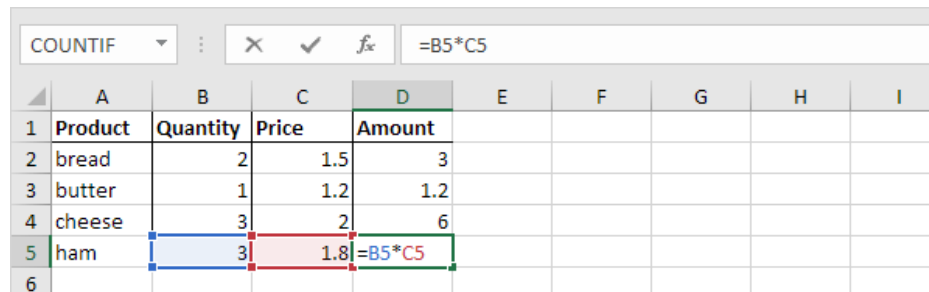


The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I
1	Product	Quantity	Price	Amount					
2	bread	2	1.5	=B2*C2					
3	butter	1	1.2						
4	cheese	3	2						
5	ham	3	1.8						
6									

The formula bar at the top shows the formula in cell D2: `=B2*C2`.

1. Select cell D2, click on the lower right corner of cell D2 and drag it down to cell D5

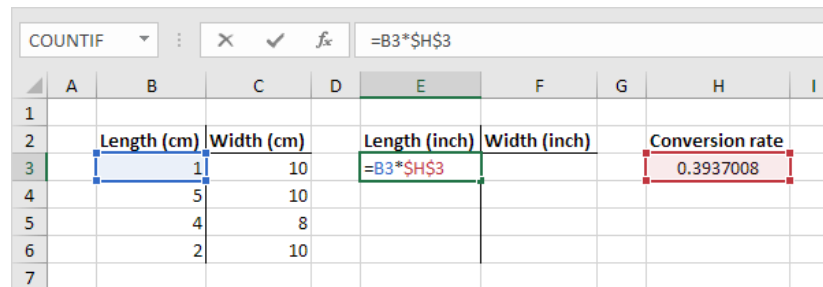


The screenshot shows the same Excel spreadsheet after the formula from cell D2 has been dragged down to cell D5. The formula in cell D5 is now `=B5*C5`.

	A	B	C	D	E	F	G	H	I
1	Product	Quantity	Price	Amount					
2	bread	2	1.5	3					
3	butter	1	1.2	1.2					
4	cheese	3	2	6					
5	ham	3	1.8	=B5*C5					
6									

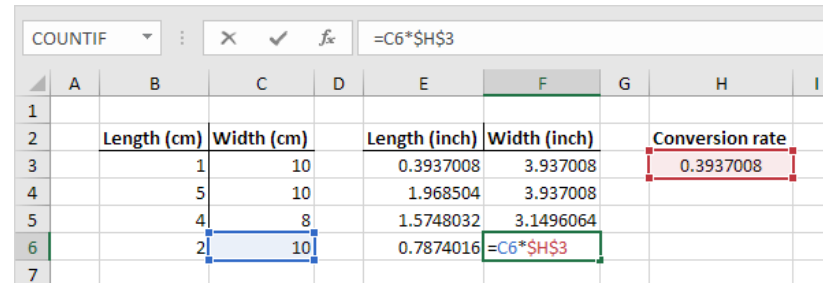
For Your Reference

1. To create an absolute reference to cell H3, place a \$ symbol in front of the column letter and row number (\$H\$3) in the formula of cell E3



	A	B	C	D	E	F	G	H	I
1									
2		Length (cm)	Width (cm)		Length (inch)	Width (inch)		Conversion rate	
3		1	10		=B3*\$H\$3			0.3937008	
4		5	10						
5		4	8						
6		2	10						
7									

2. Now we can quickly drag this formula to the other cells



	A	B	C	D	E	F	G	H	I
1									
2		Length (cm)	Width (cm)		Length (inch)	Width (inch)		Conversion rate	
3		1	10		0.3937008	3.937008		0.3937008	
4		5	10		1.968504	3.937008			
5		4	8		1.5748032	3.1496064			
6		2	10		0.7874016	=C6*\$H\$3			
7									

What Time Is It ?

To enter a date in Excel, use the "/" or "-" characters. To enter a time, use the ":" (colon). You can also enter a date and a time in one cell

A1 ✕ ✓ fx 6/23/2016					
	A	B	C	D	E
1	6/23/2016	6:00	6/23/2016 6:00		
2					

To get the year of a date, use the YEAR function

B1 ✕ ✓ fx =YEAR(A1)					
	A	B	C	D	E
1	6/23/2016	2016			
2					

What Time Is It ?

1. To add a number of days to a date, use the following simple formula

B1	:	X	✓	<i>f_x</i>	=A1+5
	A	B	C	D	E
1	6/23/2016	6/28/2016			
2					

2. To add a number of years, months and/or days, use the DATE function

<div><div>B1</div><div>✕ ✓ <i>f_x</i></div><div>=DATE(YEAR(A1)+4,MONTH(A1)+2,DAY(A1)+9)</div></div>										
	A	B	C	D	E	F	G	H	I	
1	6/23/2016	9/1/2020								
2										

What Time Is It ?

1. To get the current date and time, use the NOW function

A1		✕	✓	<i>fx</i>	=NOW()				
	A	B	C	D	E				
1	2/23/2017 10:43								
2									

2. To return the hour, use the HOUR function

B1		✕	✓	<i>fx</i>	=HOUR(A1)				
	A	B	C	D	E				
1	6:45:17	6							
2									

You Got Text

To join strings, use the & operator

D1		✕ ✓ fx		=A1 & " " & B1					
	A	B	C	D	E	F	G	H	I
1	Hi	Tim		Hi Tim					
2									

To extract the leftmost characters from a string, use the LEFT function

D1		✕ ✓ fx		=LEFT(A1, 4)					
	A	B	C	D	E	F	G	H	I
1	example text			exam					
2									

You Got Text

To get the length of a string, use the LEN function

D1		✕ ✓ fx		=LEN(A1)					
	A	B	C	D	E	F	G	H	I
1	example text			12					
2									

To find the position of a substring in a string, use the FIND function

D1		✕ ✓ fx		=FIND("am", A1)					
	A	B	C	D	E	F	G	H	I
1	example text			3					
2									

To replace existing text with new text in a string, use the SUBSTITUTE function

D1		✕ ✓ fx		=SUBSTITUTE(A1, "Tim", "John")					
	A	B	C	D	E	F	G	H	I
1	Hi Tim			Hi John					
2									

Test Our Learning

1. Add the current time and date into column T
2. Find the length of string in SKU column
3. Join “sales_commission_code” and “payment_method”



Any Questions



LEVERIFY

Thankyou