M365 Excel Basics Video 11: IF Function, IS Functions and Logical Tests (Functions)

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Topics covered in the M365 Excel Basics Video 11:

- IF Functions
- IS Functions
- Logical Tests
 - o Comparative Operators
 - o AND Logical Test
 - OR Logical Test

Date	Region	Product	Sales	Sales Category	Hurdle Category
10/30/2022	Australia	Rainbow High Dolls	\$305.44	=IF(E8:E73008>=I8,J	8,K8) 300 Average Below Average
4/2/2022	Africa	Rainbow High Dolls	\$131.88	Below Average	
3/11/2023	Africa	Rainbow High Dolls	\$258.65	Below Average	[IF(logical_test, [value_if_true], [value_if_false])
1/5/2023	Europe	Stuffed Animals/Bears	\$233.20	Below Average	Formula in F8:
7/13/2022	Africa	LOL OMG Surprise	\$343.42	Average	=IF(E8:E73008>=I8,J8,K8)
6/28/2023	Australia	Monster Trucks	\$257.63	Below Average	
4/10/2023	NorthAmerica	Monster Trucks	\$172.54	Below Average	
5/27/2022	Australia	LOL OMG Surprise	\$483.09	Average	
5/26/2022	Europe	Stuffed Animals/Bears	\$380.52	Average	

Sum of Sales (\$)	Sales Category 💌		
Region	 Average 	Below Average	Grand Total
Africa	2,934,178	1,508,237	4,442,415
Australia	2,834,365	1,473,547	4,307,912
Europe	2,911,903	1,453,851	4,365,754
NorthAmerica	2,911,732	1,454,194	4,365,926
South America	2,919,395	1,435,553	4,354,948
Grand Total	14,511,574	7,325,381	21,836,955

IF Function

The **IF Function** is one of the most used functions in Excel and it allows you to make logical comparisons between a value and what you expect.

An IF Function can have two results. The first result is if your comparison is TRUE, and the second result is if your comparison is FALSE.

For example, if Vivy walks 10,000 steps or Greater daily they met their goal otherwise not met.

=IF(K8>=O8,"Goal Met", Goal Failed") means if TRUE, then Return Goal Met, otherwise return Goal Failed.

The IF Function puts one of two things in a cell or formula. You can put:

- Two numbers
- Two formulas
- Two anything, could be a formula or text
- Two words (also referred to as Text, Text String, or Zero Length Text String)
 - It is called the Zero Length Text String because the Double Quotes make it Text and there are no characters typed between the Double Quotes, the Text has Zero Length.
 - To show nothing in an Excel formula is by using the Zero Length Text String whereby you use the Two Double Quotes with nothing in between the Double Quotes. This is typed as: ""

Formula Syntax:

=IF(logical_test, [value_if_true], [value_if_false])

```
[IF(logical_test, [value_if_true], [value_if_false])
```

IS Function

Even though many logical tests use comparative operators, there are some that do not use the comparative operators. An example would be in a situation where you would want to check whether the value in the cell is a number or a text or the cell is blank. You may also want to check if the cell contains a formula. In this case, you will need to use the IS Functions. The IS Function is not a comparative operator, but it allows you to ask a question and get a True or a False answer. The IS functions provide information about the value, for example is the value a data type, is it an error, is it a formula. The IS function can deliver a Single output Boolean value, or it can spill the results in the neighboring cells.

The Table below shows the IS Functions that you can use in an Excel spreadsheet:

IS Function	Question the Function asks
ISNUMBER(value)	Is the value a number?
ISTEXT(value)	Is the value a Text?
ISBLANK(value)	Is the cell empty?
ISERROR(value)	Is the value an error?
ISNA(value)	Is the value an #N/A error?
ISERR(value)	Is the value an error other than #N/A?
ISNONTEXT(value)	Is the value not a text?
ISLOGICAL(value)	Is the value a logical value?
ISFORMULA(value)	Is there a formula in the cell?
ISREF(value)	Is the value a reference?
ISEVEN(value)	Is the number even?
ISODD(value)	Is the number odd?

IS Functions allow you to ask a question and get a TRUE or FALSE answer.

Logical Function

A **Logical Function** is a function that returns one or two possible values depending on whether a given condition is **True** or **False**. The two possible outcomes are called Boolean values. The condition is entered as an expression of the logical test for example, =D20=E20, if the value in cell D20 is equal to the value in cell E20, the condition is TRUE, if the value in cell D20 is not equal to the value in cell E20, the condition is TRUE, if the value in cell D20 is not equal to the value in cell E20, the condition is TRUE, if the value in cell D20 is not equal to the value in cell E20, the condition is TRUE, if the value in cell D20 is not equal to the value in cell E20, the condition is FALSE.

Logical Function uses comparative operators. The comparison, or comparative operators are operators expressing the relationship between two values. When you use a comparative operator in a formula, you create a logical formula resulting in either a True or a False value.

Where the *logical-test* is a condition that is either True or False, the *value_if_true* is the value returned by the function if the condition is True, and the *value_if_false* is the argument containing the value returned by the function if the condition is False.

Formula Syntax:

=IF(logical_test, [value_if_true], [value_if_false])

```
[IF(logical_test, [value_if_true], [value_if_false])
```

The Table below shows different comparison operators that can be used with the logical functions.

Comparison Operator:	=	>	>=	<	<=	<>
Phrasas			Greater Than or		Less Than or Equal	
Fillases	Equals	Greater Than	Equal To	Less Than	То	Not Equal To
Alternate Phrases	Equal To	Above	no less than	Under	No More Than	complement of
	Same As	More Than	At Least	Below	At Most	Not
			X or more		X or less	
			Greater Than or		Less Than or Equal	
	Equals 3000	Greater Than 3000	Equal To 3000	Less Than 3000	To 3000	Not Equal To 3000
Examples of Words						complement of
Examples of words.	Equal To 3000	Above 3000	no less than 3000	Under 3000	No More Than 3000	3000
	Same As 3000	More Than 3000	At Least 3000	Below 3000	At Most 3000	Not 3000
			3000 or more		3000 or less	
	If Hurdle:					
	3000					

The Table below shows the Logical Tests Examples:

16								
17	Logical Tests Examples							
18								
19	Comparative Operator Used	Logical Test		ltem #1	ltem #2	Comparison Result	Formula Used	Comparative Operators:
0	= Equal	If value in cell D20 is Equal To t	he value in cell E20	BUSN	Busn	TRUE	=D20=E20	> Greater Than
1	= Equal	If value in cell D21 is Equal To t	he value in cell E21	ACCT&	Busn	FALSE	=D21=E21	>= Greater Than Or Equal To
2	= Equal	If value in cell D22 is Equal To t	he value in cell E22	BUSN	BUS&	FALSE	=D22=E22	<= Less Than Or Equal To
3	= Equal	If value in cell D23 is Equal To t	he value in cell E23	9:30 PM	21:30	TRUE	=D23=E23	= Equal To
4	> Greater Than	If value in cell D24 is Greater Th	an the value in cell E24	3.75	3.7	TRUE	=D24>E24	<> Not Equal To
5	> Greater Than	If value in cell D25 is Greater Th	an the value in cell E25	4.00	4	FALSE	=D25>E25	
5	>= Greater Than or Equal To	If value in cell D26 Greater Thar	or equal to the value in cell E26	3.75	3.7	TRUE	=D26>=E26	
7	< Less Than	If value in cell D27 is Less Than	the value in cell E27	14	11	FALSE	=D27 <e27< td=""><td></td></e27<>	
8	< Less Than	If value in cell D28 is Less Than	the value in cell E28	10	12	TRUE	=D28 <e28< td=""><td></td></e28<>	
9	<= Less Than or Equal To	If value in cell D29 Less Than or	Equal To the value in cell E29	4.00	4	TRUE	=D29<=E29	
0	<= Less Than or Equal To	If value in cell D30 Less Than or	Equal To the value in cell E30	4.1	4.01	FALSE	=D30<=E30	
1	<> Not Equal To	If value in cell D31 NOT Equal T	o the value in cell E31	BUSN	Busn	TRUE	=D31<>E31	
2	<> Not Equal To	If value in cell D32 NOT Equal T	o the value in cell E32	BUSN	BUS&	TRUE	=D32<>E32	
3	= Equal	If value in cell D33 is Equal To t	he value in cell E33	10/30/2024	11/1/2024	FALSE	=D33=E33	
4	> Greater Than	If value in cell D34 Greater Thar	n the value in cell E34	10/31/2024	11/1/2024	FALSE	=D34>E34	
5	< Less Than	If value in cell D35 is Less Than	the value in cell E35	11/1/2024	11/1/2024	FALSE	=D35 <e35< td=""><td></td></e35<>	
6	<> Not Equal To	If value in cell D36 NOT Equal T	o the value in cell E36	11/1/2024	11/1/2024	FALSE	=D36<>E36	
7								

NOT Logical Test

A **NOT Logical Test (Formula)** is a test that checks if two items are not equal. NOT logical test tests with a single condition, but it can also be used to test a condition with two or more conditions, and it reverses the outcome so that True becomes False and False becomes True. For example: 11/1/2024 <> 11/1/2024 will result in a FALSE.

AND Logical Test

An **AND Logical Test (Formula)** has two or more conditions. AND Logical Test is used to test two or more logical tests to evaluate if all logical tests will be TRUE.

There are four possible answers for an AND Logical Test, and only the TRUE, TRUE will result in a TRUE value from an AND Logical Test, all these other three possible answers will result in a FALSE value.

- TRUE, TRUE
- TRUE, FALSE
- FALSE, TRUE
- FALSE, FALSE

In this class in our past video, we covered the aggregate functions that can perform the AND Logical Tests. Here are the functions that we covered:

- COUNTIFS: Counts numbers with one or more conditions or criteria
- SUMIFS: Adds numbers with one or more conditions or criteria
- AVERAGEIFS: Averages numbers with one or more conditions or criteria
- MINIFS: Finds the minimum number with one or more conditions or criteria
- MAXIFS: Finds the maximum number with one or more conditions or criteria

An example of an AND Logical Test is if you would like to determine if a student is eligible for the honors roll. To be awarded with an honors roll in each quarter, students must have completed more than 12 college level credits AND with a cumulative GPA of 3.5 and above. Here is how the formula is entered in the cell:

=AND(E10>\$C\$6,F10>=\$C\$7) =AND(College Level Credits >12, Cumulative GPA>=3.5)

OR Logical Test

An **OR Logical Test (Formula)** has two or more conditions. This logical test is used to check whether at least one test evaluates to True. With the OR logical test, you are determining whether one or more of the logical tests evaluates to True.

There are four possible answers for an OR Logical Test, and only the FALSE, FALSE will result in a FALSE value from an OR Logical Test, all these other three possible answers will result in a TRUE value. You can have one TRUE, or both TRUE and the OR logical test will evaluate to a TRUE.

- FALSE, FALSE
- TRUE, FALSE
- FALSE, TRUE
- TRUE, TRUE

An example of the OR Logical test is the Business and Accounting Department has a scholarship that is offered only to students whose program of study is Business or Accounting. Here is how the formula is entered in the cell:

=OR(D35=\$C\$31,D35=\$C\$32) =OR(Program of Study=Accounting, Program of Study=Business)

The AND and OR functions can have up to 255 logical tests entered as arguments, separated by commas. The order in which you enter these arguments does not matter because for both functions they are looking at how many TRUE values there are and not the order in which they occur. The NOT function accepts only one argument. In all these three functions, the arguments interpret any nonzero number as TRUE and interpret zero as FALSE. All these three functions can accept logical tests created with comparison operators, numeric values, the IS functions, any other function or formula that delivers a Boolean or numeric value (Girvin, 2022).

NOTE: You cannot Spill your answers using the AND, OR, and NOT Functions, with these functions you must enter the formula in the top cell and then manually copy the formula down the column. If you do not want to copy then you can use the Excel Table formula as this will automatically copy the formulas for you.

Examples:

The next pages show the pictures of all the examples in the M365 Excel Basics Video 11, and it includes also the formulas used on each of the examples.

M N O P Q F

Performance Indicator10,000Goal MetGoal Failed

A B C D E FGHI J K L 1 IF for putting 1 of 2 Things is a Cell

2 Example 1 and 2

3 Vivy is tracking her steps everyday and wants a quick way to tell if the Goal was met or not. Use the IF Function to test the steps for each day.

4 If Vivy walks 10,000 steps or Greater every day, the IF function will return the text string "Goal Met", otherwise it returns "Goal Failed"

5 6 7

=B9:B39>=E9

=IF(K9:K39>=O9,P9,Q9) =	=IF(K9:K39>=O9,"Goal Met","Goal Failed")
-------------------------	--

			Goal Met or not?				Goal Met or not?	Goal Met or not?
8	Date	Steps Completed	TRUE or FALSE	Hurdle	Date	Steps Completed	TRUE or FALSE	TRUE or FALSE
9	8/1/2024	11,065	TRUE	10,000	8/1/2024	11,065	Goal Met	Goal Met
10	8/2/2024	1,759	FALSE		8/2/2024	1,759	Goal Failed	Goal Failed
11	8/3/2024	445	FALSE	Γ	8/3/2024	445	Goal Failed	Goal Failed
12	8/4/2024	8,213	FALSE		8/4/2024	8,213	Goal Failed	Goal Failed
13	8/5/2024	8,371	FALSE		8/5/2024	8,371	Goal Failed	Goal Failed
14	8/6/2024	5,516	FALSE	1	8/6/2024	5,516	Goal Failed	Goal Failed
15	8/7/2024	4,299	FALSE		8/7/2024	4,299	Goal Failed	Goal Failed
16	8/8/2024	6,711	FALSE	1	8/8/2024	6,711	Goal Failed	Goal Failed
17	8/9/2024	3,693	FALSE		8/9/2024	3,693	Goal Failed	Goal Failed
18	8/10/2024	12,050	TRUE		8/10/2024	12,050	Goal Met	Goal Met
19	8/11/2024	12,005	TRUE]	8/11/2024	12,005	Goal Met	Goal Met
20	8/12/2024	10,288	TRUE		8/12/2024	10,288	Goal Met	Goal Met
21	8/13/2024	2,858	FALSE		8/13/2024	2,858	Goal Failed	Goal Failed
22	8/14/2024	8,214	FALSE		8/14/2024	8,214	Goal Failed	Goal Failed
23	8/15/2024	2,954	FALSE		8/15/2024	2,954	Goal Failed	Goal Failed
24	8/16/2024	3,538	FALSE		8/16/2024	3,538	Goal Failed	Goal Failed
25	8/17/2024	10,950	TRUE		8/17/2024	10,950	Goal Met	Goal Met
26	8/18/2024	14,986	TRUE		8/18/2024	14,986	Goal Met	Goal Met
27	8/19/2024	10,326	TRUE		8/19/2024	10,326	Goal Met	Goal Met
28	8/20/2024	8,472	FALSE		8/20/2024	8,472	Goal Failed	Goal Failed
29	8/21/2024	11,588	TRUE		8/21/2024	11,588	Goal Met	Goal Met
30	8/22/2024	12,006	TRUE		8/22/2024	12,000	Goal Met	Goal Met
31	8/23/2024	10,562	TRUE]	8/23/2024	10,562	Goal Met	Goal Met
32	8/24/2024	11,018	TRUE		8/24/2024	11,018	Goal Met	Goal Met
33	8/25/2024	13,693	TRUE]	8/25/2024	13,693	Goal Met	Goal Met
34	8/26/2024	10,446	TRUE		8/26/2024	10,446	Goal Met	Goal Met
35	8/27/2024	11.167	TRUE		8/27/2024	11.167	Goal Met	Goal Met

A	В	С	D	E	F	G	Н	I.	J	К
1										
2	You would like to	track if you are within	the budget for the Mon	th or not.						
3	If you are within th	ne budget the IF funct	ion returns 'Within Bud	get', otherwise 'Over B	udget'.					
4	You will also calc	ulate the amount ove	r the budget for every m	nonth.						
5										
6										
7 Ex. 3	Month	Budgeted Amount	Actual Amount Spent	Status? TRUE or FALSE						
8	Dec	\$900.00	\$1,200.00	FALSE		=D8:D14<=C8:C14				
9	Jan	\$700.00	\$500.00	TRUE						
10	Feb	\$400.00	\$500.00	FALSE						
11	Mar	\$500.00	\$300.00	TRUE						
12	Apr	\$300.00	\$150.00	TRUE						
13	May	\$200.00	\$190.00	TRUE						
14	Jun	\$700.00	\$900.00	FALSE						
15										
16										
17 Ex. 4	Month	Budgeted Amount	Actual Amount Spent	Status	Amount Over		Status Hurdle			
18	Dec	\$900.00	\$1,200.00	Over Budget	\$300.00		Within Budget	Over Budget		
19	Jan	\$700.00	\$500.00	Within Budget	\$0.00					
20	Feb	\$400.00	\$500.00	Over Budget	\$100.00					
21	Mar	\$500.00	\$300.00	Within Budget	\$0.00					
22	Apr	\$300.00	\$150.00	Within Budget	\$0.00					
23	May	\$200.00	\$190.00	Within Budget	\$0.00					
24	Jun	\$700.00	\$900.00	Over Budget	\$200.00					
25				=IF(D18:D24<=C18:C24,	H18,I18)					
26				3:C24,0,D18:D24-C18	:C24)					
27										

	А	В	С	D	E	F	G	Н	I	J
27										
28		You would like to ke	eep a track of the cu	stomers that owe the c	ompany money.					
29		If the customer owe	es a balance the IF f	unction will return the a	mount owed otherwis	e returns 'No Bala	nce			
30										
							Show the Balance			
						Show Nothing or	Amount Owed or			
31	Ex. 5	Customer	Invoice Amount	Amount Paid	Amount Owed	"Balance Owed"	Show Nothing		Hurdle:	
32		Tiana Anderson	\$481.13	\$481.13	\$0.00				Balance Owed	
33		Cinderelli Carson	\$411.75	\$461.75	-\$50.00					
34		Carmen Williams	\$209.79	\$209.79	\$0.00					
35		Brixten Luis	\$232.33	\$157.33	\$75.00	Balance Owed	\$75.00			
36		Stella Farewell	\$354.94	\$300.00	\$54.94	Balance Owed	\$54.94			
37		Miles Smith	\$376.30	\$376.30	\$0.00					
38		Miley Davis	\$409.84	\$400.00	\$9.84	Balance Owed	\$9.84			
39		Daudi Shem	\$320.08	\$0.00	\$320.08	Balance Owed	\$320.08			
40		Marcus Brown	\$402.60	\$400.00	\$2.60	Balance Owed	\$2.60			
41		Kaitlyn Miller	\$218.45	\$218.45	\$0.00					
42		Sophia Garcia	\$347.35	\$354.70	-\$7.35					
43										
44					=C32:C42-D32:D42	=IF(E32:E42<=0,""	,132)			
45							=IF(E32:E42<=0,"",E3	2:E42)		
46										
47		You are the sales a	nd Marketting mana	ger and would like to give	ve a Bonus to all the er	nployees whose s	ales are Greater Th	an 25,000.		
48		You would like to tr	ack which employee	e gets the Bonus and ho	w much of the Bonus t	hey get.				
49		The contract read t	hat they will receive	a 10% Bonus if the sale	es are Greater Than \$2	5,000, otherwise	2%			
50										
51	Ex. 6	Employee	Sales Amount	Bonus Commission %		Hurdle:	Bonus %	No Bonus %		
52		Tiana Anderson	\$45,532.01	10.00%		\$25,000.00	10.00%	2.00%	b .	
53		Cinderelli Carson	\$24,999.99	2.00%						
54		Carmen Williams	\$48,869.27	10.00%						
55		Brixten Luis	\$23,628.28	2.00%		=IF(C52:C58>F52,0	G52,H52)			
56		Stella Farewell	\$19,065.53	2.00%						
57		Miles Smith	\$32,385.57	10.00%						
58		Miley Davis	\$47,062.08	10.00%						

	Α	В	С	D	E	F	G	Н	I.	J	К
46											
47		You are the sales a	nd Marketting mana	ger and would like to giv	ve a Bonus to all the en	nployees whose s	sales are Greater Th	an 25,000.			
48		You would like to tra	ack which employee	e gets the Bonus and ho	w much of the Bonus t	hey get.					
49		The contract read t	hat they will receive	a 10% Bonus if the sale	es are Greater Than \$2	5,000, otherwise	2%				
50											
51	Ex. 6	Employee	Sales Amount	Bonus Commission %		Hurdle:	Bonus %	No Bonus %			
52		Tiana Anderson	\$45,532.01	10.00%		\$25,000.00	10.00%	2.00%			
53		Cinderelli Carson	\$24,999.99	2.00%							
54		Carmen Williams	\$48,869.27	10.00%							
55		Brixten Luis	\$23,628.28	2.00%		=IF(C52:C58>F52,	G52,H52)				
56		Stella Farewell	\$19,065.53	2.00%							
57		Miles Smith	\$32,385.57	10.00%							
58		Miley Davis	1iley Davis \$47,062.08 10.00%								
59											
60											
61											
				Bonus Commission \$							
62	Ex. 7	Employee	Sales Amount	Amount Paid		Hurdle:	Bonus %	No Bonus %			
63		Tiana Anderson	\$45,532.01	\$4,553.20		\$25,000.00	10.00%	2.00%			
64		Cinderelli Carson	\$24,999.99	\$500.00							
65		Carmen Williams	\$48,869.00	\$4,886.90							
66		Brixten Luis	\$23,628.00	\$472.56		=IF(C63:C69>F63,	G63,H63)*C63:C69				
67		Stella Farewell	\$19,065.00	\$381.30							
68		Miles Smith	\$32,385.00	\$3,238.50							
69		Miley Davis	\$47,062.01	\$4,706.20							
70											
71											
72											

	А	В	С	D	E	F	G	Н	I.	J	K	L	М	Ν	0	Р	Q
1																	
2	Ex. 8	You work at the enro	llment office an	d would like to	post Honors Ro	oll on the transo	cript for the stu	udents wh	o have co	mpleted m	ore than 1	2 credits a	and have a	cumulativ	ve GPA of	3.5 and ab	ove
3		If the student has co	mpleted 12 coll	ege level credit	s and have a cu	mulative GPA o	of 3.5 and abo	ve, they ar	e eligible t	to have the	e Honors R	loll posted	on their ti	ranscript o	otherwise l	Vot eligible	э
4		Create a logical form	ula that shows i	if they are eligib	ole for the Hono	rs Roll											
5																	
6		Credit Hurdle	12				Formula in cel	l G10									
7		GPA Hurdle	3.5				=AND(E10>\$C	\$6,F10>=\$	SC\$7)								
8																	
			Student ID		College Level	Cumulative	Honors Roll										
9		Students Name	Number	Major	Credits	GPA	Eligible?										
10		Barton, Allie	6114960	Physics	45	3.2	FALSE										
11		Gill, Hallie	5054429	Nursing	60	3.6	TRUE										
12		Lucas, Jeanette	5337134	Chemistry	45	3.9	TRUE										
13		Tucker, Mathew	6075206	Business	90	3.4	FALSE										
14		Casey, Amy	6182899	Business	23	3.8	TRUE										
15		Boyle, Rhett	6831591	Accounting	11	3.95	FALSE										
16		Key, Cortez	5454242	Physics	70	2.25	FALSE										
17		Bailey, Jonathan	5277513	Biology	40	3.75	TRUE										
18		Jones, Adolph	6754697	Physics	65	3.65	TRUE										
19		Kelley, Bobby	5174488	Biology	70	3.2	FALSE										
20		Morrison, Rosella	6597730	Nursing	10	4	FALSE										
21		Cruz, Annmarie	6537185	Nursing	12	3.8	FALSE										
22		Berg, Jarrod	6582539	Accounting	50	3.49	FALSE										
23		Hart, Mikel	5495287	Business	80	3.5	TRUE										
24		Mckenzie, Levi	6182364	Chemistry	50	2.5	FALSE										
25																	

	А	В	С	D	E	F	G	Н	I.	J	K	L	М	Ν		
27																
28	Ex. 9	The Business and A	ccounting Depar	tment has a sc	holarship that is	offered only to	o students who	ose progra	m of study	/ is Busine	ess or Acco	ounting				
29		Create a logical forr	nula that shows	True for the stu	dents eligible fo	r the scholarsh	nip and False if	fnot								
30																
31		Program of Study	Accounting				Formula in cell G35									
32		Program of Study	=OR(D35=\$C\$31,D35=\$C\$32)													
33																
			Student ID	Program of	College Level	Cumulative	Scholarship									
34		Students Name	Number	Study	Credits	GPA	Eligible?									
35		Barton, Allie	6114960	Physics	45	3.2	FALSE									
36		Gill, Hallie	5054429	Nursing	60	3.6	FALSE									
37		Lucas, Jeanette	5337134	Chemistry	45	3.9	FALSE									
38		Tucker, Mathew	6075206	Business	90	3.4	TRUE									
39		Casey, Amy	6182899	Business	23	3.8	TRUE									
40		Boyle, Rhett	6831591	Accounting	11	3.95	TRUE									
41		Key, Cortez	5454242	Physics	70	2.25	FALSE									
42		Bailey, Jonathan	5277513	Biology	40	3.75	FALSE									
43		Jones, Adolph	6754697	Business	65	3.65	TRUE									
44		Kelley, Bobby	5174488	Biology	70	3.2	FALSE									
45		Morrison, Rosella	6597730	Nursing	10	4	FALSE									
46		Cruz, Annmarie	6537185	Nursing	12	3.8	FALSE									
47		Berg, Jarrod	6582539	Accounting	50	3.49	TRUE									
48		Hart, Mikel	5495287	Business	80	3.5	TRUE									
49		Mckenzie, Levi	6182364	Chemistry	50	2.5	FALSE									
50																

	А	В	С	D	E	F	G	Н	1	J	K	L	М	Ν	0	Р	Q	
53																		
54	Ex. 10	The Business and A	ccounting Depar	tment has a sc	holarship that is	offered only to	o students who	ose their p	rogram of	study is B	usiness or	Accountir	ng with a C	Cumulative	e GPA of 2.	5 and abo	ve	
55		Create a logical form	nula that shows	True for the stu	dents eligible fo	or the scholarsh	nip and False if	not										
56																		
57		Cumulative GPA	2.5															
58		Program of Study	Accounting				Formula in cell	G62										
59		Program of Study	Business				=AND(F62>=\$0	C\$57,OR(E	062=\$C\$58	3,D62=\$C\$	59))							
60																		
			Student ID		College Level	Cumulative	Scholarship											
61		Students Name	Number	Major	Credits	GPA	Eligible?											
62		Barton, Allie	6114960	Physics	45	3.2	FALSE											
63		Gill, Hallie	5054429	Nursing	60	3.6	FALSE											
64		Lucas, Jeanette	5337134	Chemistry	45	3.9	FALSE											
65		Tucker, Mathew	6075206	Business	90	3.4	TRUE											
66		Casey, Amy	6182899	Business	23	3.8	TRUE											
67		Boyle, Rhett	6831591	Accounting	11	3.95	TRUE											
68		Key, Cortez	5454242	Accounting	70	2.25	FALSE											
69		Bailey, Jonathan	5277513	Biology	40	3.75	FALSE											
70		Jones, Adolph	6754697	Business	65	3.65	TRUE											
71		Kelley, Bobby	5174488	Biology	70	3.2	FALSE											
72		Morrison, Rosella	6597730	Nursing	10	4	FALSE											
73		Cruz, Annmarie	6537185	Nursing	12	3.8	FALSE											
74		Berg, Jarrod	6582539	Accounting	50	3.49	TRUE											
75		Hart, Mikel	5495287	Business	80	3.5	TRUE											
76		Mckenzie, Levi	6182364	Business	50	2.4	FALSE											
77																		
78																		

	Α	В	С	D	E	F	G	Н	I.	J	K	L	М	Ν
79														
80	Ex. 11	The Graduation offic	e would like to t	track the stude	nts that are eligi	ble to apply for	r graduation.							
81		Students are eligible	to apply for gra	duation if they	have completed	75 or more co	ollege level cre	dits and h	ave a cum	ulative GF	A of 2.0 or	above		
82		Create a logical form	ula that shows	True for the stu	dents eligible to	apply for grad	uation and Fal	lse if not e	ligible					
83														
84														
85		Cumulative GPA 2 Formula in cell G89												
86		College Level Credits	75				=AND(F89>=\$	C\$85,E89>	>=\$C\$86)					
87														
			Student ID		College Level	Cumulative	Graduation							
88		Students Name	Number	Major	Credits	GPA	Eligible?							
89		Barton, Allie	6114960	Physics	45	3.2	FALSE							
90		Gill, Hallie 5054429 Nursing 75 3.6 TRUE												
91		Lucas, Jeanette	5337134	Chemistry	84	1.85	FALSE							
92		Tucker, Mathew	6075206	Business	90	3.4	TRUE							
93		Casey, Amy	6182899	Business	76	3.8	TRUE							
94		Boyle, Rhett	6831591	Accounting	90	1.9	FALSE							
95		Key, Cortez	5454242	Accounting	80	2.25	TRUE							
96		Bailey, Jonathan	5277513	Biology	78	3.75	TRUE							
97		Jones, Adolph	6754697	Business	65	3.65	FALSE							
98		Kelley, Bobby	5174488	Biology	70	3.2	FALSE							
99		Morrison, Rosella	6597730	Nursing	160	4	TRUE							
100		Cruz, Annmarie	6537185	Nursing	72	3.8	FALSE							
101		Berg, Jarrod	6582539	Accounting	50	3.49	FALSE							
102		Hart, Mikel	5495287	Business	80	3.5	TRUE							
103		Mckenzie, Levi	6182364	Business	89	2.4	TRUE							
104														
105														

	А	В	С	D	E	F	G
1				Ex 12	Ex 13	Ex 14	
2				=ISNUMBER(B7:B21)	=ISBLANK(B7:B21)	=ISTEXT(B7:B21)	
3				ISNUMBER	ISBLANK	ISTEXT	
4				Is it a Number?	Is cell empty?	Is it Text?	
5							
6	Date	Sales	Product	Sale Entered?	Sale Not Entered	Is Text?	
7	8/5/2024		Monster Trucks	FALSE	TRUE	FALSE	
8	8/9/2024	\$1,598.16	Stuffed Animals/Bears	TRUE	FALSE	FALSE	
9	8/7/2024	\$3,013.36	Hot Wheels	TRUE	FALSE	FALSE	
10	8/3/2024		LOL Surprise	FALSE	TRUE	FALSE	
11	8/17/2024	\$3,735.88	Hot Wheels	TRUE	FALSE	FALSE	
12	8/19/2024	\$1,208.49	Hot Wheels	TRUE	FALSE	FALSE	
13	8/27/2024	\$4495,.21	Monster Trucks	FALSE	FALSE	TRUE	
14	8/11/2024	\$3,855.30	LOL Surprise	TRUE	FALSE	FALSE	
15	8/1/2024	\$1,798.67	Hot Wheels	TRUE	FALSE	FALSE	
16	8/17/2024	&4589.36	Monster Trucks	FALSE	FALSE	TRUE	
17	8/5/2024		Hot Wheels	FALSE	TRUE	FALSE	
18	8/11/2024	\$1,437.43	LOL OMG Surprise	TRUE	FALSE	FALSE	
19	8/30/2024	\$1,135.58	Monster Trucks	TRUE	FALSE	FALSE	
20	8/8/2024	3413.28	Hot Wheels	TRUE	FALSE	FALSE	
21	8/8/2024	2.714.54	LOL OMG Surprise	FALSE	FALSE	TRUE	
22							
23							

	Α	В	С	D	E	F	G	Н	I J	К	L	М	Ν	0
1 E	x. 15	You are doing	g your own b	ookkeeping and you woul	d like to track and calculate	your checkbook	balance							
2		Create a form	nula in cell t	hat will calculate your che	eckbook balance when you e	enter a date into t	he date colui	mn, or show nothing						
3		when a date	is not entere	ed. Copy the formula dowr	n the column.									
4														
5														
6				My Chec	k Book Register									
7		Check No.	Date	Transaction	Amount of Deposit	Withdrawals	Balance		Balance			Balance		
8					Balance Forward ==>		\$42,534.75							
9		e447	10/2/2024	Highline Water District		99.35	\$42,435.40	=IF(ISNUMBER(C9),G8+E9-F9,"")	\$42,435.40	=IF(ISBLANK(C9),"",G8+E9-F9)		\$42,435.40	=IF(C9="","",G8+E9-F9)	
10			10/2/2024	Deposit	1,235.57		\$43,670.97		\$43,670.97			\$43,670.97		
11		e555	10/4/2024	Xfinity		185.91	\$43,485.06		\$43,485.06			\$43,485.06		
12		1001	10/5/2024	Bob's Lawn Mowers		160.00	\$43,325.06		\$43,325.06			\$43,325.06		
13		1002	2 10/6/2024	Salon DayVon		55.00	\$43,270.06		\$43,270.06			\$43,270.06		
14		e775	10/7/2024	Auto-Loan		436.67	\$42,833.39		\$42,833.39			\$42,833.39		
15		1003	3 10/7/2024	Toyota Fife		120.20	\$42,713.19		\$42,713.19			\$42,713.19		
16			10/9/2024	Deposit	975.55		\$43,688.74		\$43,688.74			\$43,688.74		
17			10/9/2024	Deposit	1,120.75		\$44,809.49		\$44,809.49			\$44,809.49		
18		1004	10/10/2024	Costco		200.19	\$44,609.30		\$44,609.30			\$44,609.30		
19		e875	10/10/2024	Progressive Insurance		128.25	\$44,481.05		\$44,481.05			\$44,481.05		
20		1005	5 10/12/2024	Trader Joe's		59.58	\$44,421.47		\$44,421.47			\$44,421.47		
21		1006	6 10/13/2024	Discover Toys		28.46	\$44,393.01		\$44,393.01			\$44,393.01		
22		1007	7 10/14/2024	Office Depot		74.31	\$44,318.70		\$44,318.70			\$44,318.70		
23			10/15/2024	Deposit	1,074.32		\$45,393.02		\$45,393.02			\$45,393.02		
24		e1050	10/15/2024	Mortgage Loan		1,107.00	\$44,286.02		\$44,286.02			\$44,286.02		
25														
26														
27														
28														
29														
30				1										

A	В	C	D	E	F	G	Н	1.1	J	K	L	M	N	0	Р	Q	R	S
1 Ex. 16	You run a small b	ousiness and would	like to create a	n inventory tra	acking sheet that tra	acks your ii	nventory. Below the Inventory Table											
2	The "Number of I	tems Purchased" C	olumn contains	the number o	of inventory items p	urchased (added to balance).											
3	The "Number of I	tems Sold" Column	contains the nu	Imber of inver	ntory items sold (su	btracted fr	om balance).											
4	Create a formula	a that can calculate	the Inventory b	alance when a	a date is entered to	the date c	olumn,											
5	or show nothing	when a date is not e	entered. Then co	py the formul	la down the column													
6																		
7																		
8																		
9		Inventor	y Tracker for J	loy Curio Sh	юр													
		Number of Items	Purchase	Number of	Invoice													
10	Date	Purchased	Order Number	Items Sold	Number	Balance		Balance		Balance		Balance						
11		Inventory Count fro	om End of Last Pe	riod======		257												
12	10/15/2024				50 INV. #501	207	=IF(ISNUMBER(B12),G11+C12-E12,"")	207	=IF(ISBLANK(B12),"",G11+C12-E12)	207	=IF(B12="","",G11+C12-E12)	207	=IF(OR(IS	NUMBER(E1	2),ISNUMB	ER(C12)),G	11+C12-E1	2,"")
13	10/16/2024				20 INV. #502	187		187		187		187						
14	10/17/2024	250	PO # 71150			437		437		437		437						
15	10/19/2024				25 INV. #503	412		412		412		412						
16	10/20/2024				45 INV. #504	367		367		367		367						
17	10/21/2024			1	L00 INV. #505	267		267		267		267						
18	10/22/2024				35 INV. #506	232		232		232		232						
19	10/23/2024				35 INV. #507	197		197		197		197						
20	10/24/2024	250	PO # 71151			447		447		447		447						
21	10/26/2024				40 INV. #508	407		407		407		407						
22	10/27/2024				56 INV. #509	351		351		351		351						
23	10/28/2024				38 INV. #510	313		313		313		313						
24	10/29/2024				50 INV. #511	263		263		263		263						
25	10/30/2024			1	L19 INV. #512	144		144		144		144						
26	10/31/2024	250	PO # 71152			394		394		394		394						
27																		
28																		
29																		
30																		
31																		
32																		

A	В	С	D	E	F	G H	L L	J	K	LN	1 N	0	P	Q	R
1 Ex. 17	Create an IF logi	ical formu	la that returns 'Average	e' if the sal	es are Greater Tha	n or Equal	to 300, other	wise 'Belov	v Average'						
2	Company can ch	hange the	category at any given t	ime so be	sure to follow the I	Excel Gold	en Rule		-						
3	Make a CrossTal	bulated St	tandard PivotTable Sale	es Summa	ry report that show	s the Regi	on in the Row	s Area and	the Sales Categor	y in the	Columns Area and	Sales in the Values /	Area		
4	Add Number For	rmatting to	o the values, show repo	ort lavout i	n Tabular Form and	d Name the	e PivotTable.	Change the	Design if you like	·					
5			· · · · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , , , ,											
6															
7	Date Regi	on	Product	Sales	Sales Category		Hurdle	Category			Sum of Sales (\$)	Sales Category			
8	10/30/2022 Austr	ralia	Rainbow High Dolls	\$305.44	Average		30	0 Average	Below Average		Region	Average	Below Average	Grand Total	
9	4/2/2022 Africa	a	Rainbow High Dolls	\$131.88	Below Average						Africa	2.934.178	1.508.237	4,442,415	
10	3/11/2023 Africa	a	Rainbow High Dolls	\$258.65	Below Average						Australia	2.834.365	1.473.547	4,307,912	
11	1/5/2023 Euro	pe	Stuffed Animals/Bears	\$233.20	Below Average	Form	ula in F8:				Europe	2.911.903	1.453.851	4,365,754	
12	7/13/2022 Africa	а	LOL OMG Surprise	\$343.42	Average	=IF(E8	3:E73008>=18.	J8.K8)			NorthAmerica	2.911.732	1,454,194	4,365,926	
13	6/28/2023 Austr	ralia	Monster Trucks	\$257.63	Below Average	`					South America	2,919,395	1,435,553	4,354,948	
14	4/10/2023 North	hAmerica	Monster Trucks	\$172.54	Below Average						Grand Total	14,511,574	7,325,381	21,836,955	
15	5/27/2022 Austr	ralia	LOL OMG Surprise	\$483.09	Average										
16	5/26/2022 Euro	pe	Stuffed Animals/Bears	\$380.52	Average										
17	7/3/2023 Euro	pe	Hot Wheels	\$184.15	Below Average										
18	11/16/2022 Euro	pe	Hot Wheels	\$457.83	Average										
19	8/11/2023 North	hAmerica	Hot Wheels	\$479.02	Average										
20	8/27/2023 Africa	a	LOL Surprise	\$103.45	Below Average										
21	6/15/2023 Africa	a	LOL Surprise	\$184.43	Below Average										
22	9/6/2022 South	h America	Rainbow High Dolls	\$235.62	Below Average										
23	7/3/2023 South	h America	Stuffed Animals/Bears	\$498.02	Average										
24	7/4/2023 Euro	pe	Stuffed Animals/Bears	\$157.02	Below Average										
25	8/16/2023 Euro	pe	Hot Wheels	\$433.55	Average										
26	3/26/2022 Austr	ralia	LOL OMG Surprise	\$129.98	Below Average										
27	5/25/2022 North	hAmerica	LOL OMG Surprise	\$177.49	Below Average										
28	6/2/2022 Austr	ralia	Monster Trucks	\$140.71	Below Average										
29	5/2/2023 Euro	pe	Rainbow High Dolls	\$247.27	Below Average										
30	8/29/2022 Africa	а	Rainbow High Dolls	\$228.73	Below Average										
31	1/3/2022 Africa	а	LOL Surprise	\$496.19	Average										
32	12/14/2021 North	hAmerica	LOL Surprise	\$421.08	Average										