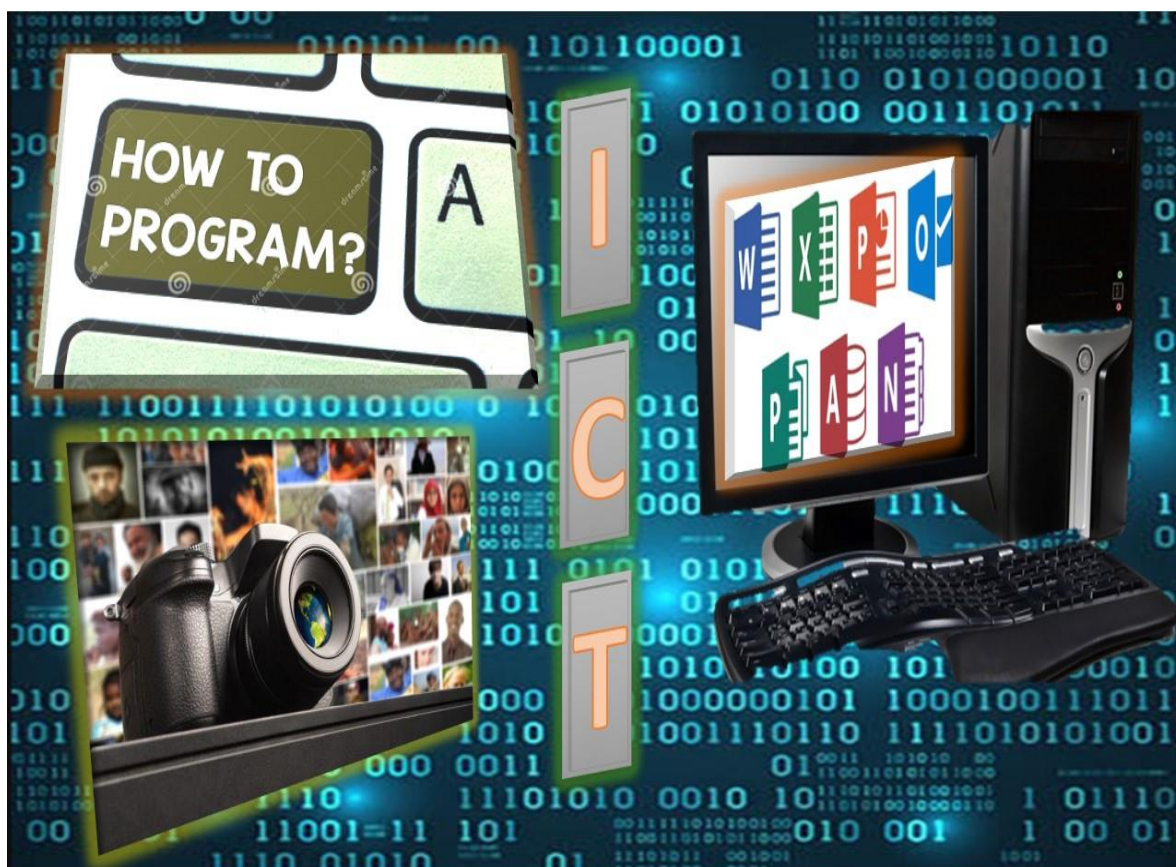




ICT 7 Activity Sheet

Quarter 4 | Week 2

Order of operations in Excel formula




MARICAR R. PORNEL, Oton NHS
ZALDY M. TONDO, Division Science Coordinator
WRITERS

Introductory Message


Welcome to ICT 7!

The **Learning Activity Sheet** is self-directed instructional materials aimed to guide the learners in accomplishing activities at their own pace and time using the contextualized resources in the community. This will also assist the learners in acquiring the lifelong learning skills, knowledge and attitudes for productivity and employment.



For learning facilitator:

The **ICT 7 Activity Sheet** will help you facilitate the leaching-learning activities specified in each Most Essential Learning Competency (MELC) with minimal or no face-to-face encounter between you and learner. This will be made available to the learners with the references/links to ease the independent learning.



For the learner:

The **ICT 7 Activity Sheet** is developed to help you continue learning even if you are not in school. This learning material provides you with meaningful and engaging activities for independent learning. Being an active learner, carefully read and understand the instructions then perform the activities and answer the assessments. This will be returned to your facilitator on the agreed schedule.

Name of Learner: _____ Grade and Section: _____
 School: _____ Date: _____

ICT-7 ACTIVITY SHEET

Order of operations in Excel formula

Learning Competency:

Apply the order of operations in creating more complex formulas in Excel.

Support Competencies:

- Explain what is PEMDAS in creating formula.

Background Information for Learners

More complex formulas can contain **several mathematical operators**, like $6+10*8$. When there's more than one operation in a formula, the **order of operations** tells Excel which operation to calculate first.

In this lesson, you will learn the order of operations in writing a formula in Excel.

Activity Proper.

Activity 1.

The Order of Operations

Excel calculates formulas based on the following order of operations:

1. Operations enclosed in parentheses
2. Exponential calculations (3^2 , for example)
3. Multiplication and division, whichever comes first
4. Addition and subtraction, whichever comes first

Using the Order of Operations

P - Parentheses	$10 + (6-3)/2^2*4-1$
E - Exponents	$10 + 3/2^2*4-1$
MD – Multiplication and Division (Left to Right)	$10 + 3/4*4-1$
	$10 + 0.75*4-1$
AS - Addition and Subtraction (Left to Right)	$10 + 3-1$
	$13-1$

1. Open a new workbook and type the data below.
Format the worksheet as shown below:

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	
6	Cheese Burger	80	63	
7	Spaghetti	100	60	
8	Palabok with chicken	105	125	
9			TOTAL	
10			SALES TAX	

To Compute the AMOUNT for each menu item.

2. Select cell D4, type the formula:
=B5*C5, and press enter.
3. Use fill handle (like in our previous activity) to copy the formula in cells D6,D7, D8 respectively.

To compute for the TOTAL amount in column D

1. Select cell D9, type the formula
= D5+D6+D7+D8, and press Enter key

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	2500
6	Cheese Burger	80	63	5040
7	Spaghetti	100	60	6000
8	Palabok with chicken	105	125	13125
9			TOTAL	=D5+D6+D7+D8
10			SALES TAX	

Note: It's especially important to follow the order of operations when creating a formula. Otherwise, Excel won't calculate the results accurately. In our example, if the **parentheses** are not included, the multiplication is calculated first and the result is incorrect. Parentheses are often the best way to define which calculations will be performed first in Excel.

Save the workbook with a new filename
Q4_W2_***(where *** is your family name)

Creating complex formulas

In the example below, we'll demonstrate how Excel uses the order of operations to solve a more complex formula. Here, we want to calculate the cost of **sales tax** for a sales invoice. To do this, we'll write our formula as **=(D5+D6+D7+D8)*0.075** in cell **D10**.

This formula will add the prices of our items, then multiply that value by the 7.5% tax rate (which is written as 0.075) to calculate the answer.

`=(D5+D6+D7+D8)*0.075`

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	2500
6	Cheese Burger	80	63	5040
7	Spaghetti	100	60	6000
8	Palabok with chicken	105	125	13125
9			TOTAL	26665
10			SALES TAX	=(D5+D6+D7+D8)*0.075

Excel follows the order of operations and first adds the values inside the parentheses: **(2500+5040+6000+13125) = 26665** It then multiplies that value by the tax rate: **26665*0.075**. The result will show that the sales tax is **1999.875**.

`D5+D6+D7+D8)*0.075`

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	2500
6	Cheese Burger	80	63	5040
7	Spaghetti	100	60	6000
8	Palabok with chicken	105	125	13125
9			TOTAL	26665
10			SALES TAX	1999.875

Activity 2.

To create a complex formula using the order of operations:

In the example below, we'll use **cell references** along with **numerical values** to create a complex formula that will calculate the **TOTAL** for a sales invoice. The formula will calculate the cost of each menu item first, then add these values.

In this activity, we will continue with what we have started in activity 1.

1. Select cell D9, and press **Del** key on your keyboard to delete the contents in cell D9.
2. Select cell D9, and type the formula
=B5*C5+B6*C6+B7*C7+B8*C8

This formula will follow the order of operations, first performing the multiplication: **50*50= 2500** , **80*63 = 5040**, **100* 60=600**, **105*125=13125**. It then will add these values to calculate the total: **2500+5040+6000+13125=26665**

`=B5*C5+B6*C6+B7*C7+B8*C8`

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	2500
6	Cheese Burger	80	63	5040
7	Spaghetti	100	60	6000
8	Palabok with chicken	105	125	13125
9			TOTAL	=B5*C5+B6*C6+B7*C7+B8*C8
10			SALES TAX	1999.875

3. Double-check your formula for accuracy, then press **Enter** on your keyboard. The formula will calculate and display the **result**. In our example, the result shows that the amount total of the invoice is **26665**

=B5*C5+B6*C6+B7*C7+B8*C8

	A	B	C	D
1	MARJONEL SNACKBAR			
2	Sales Invoice			
3				
4	MENU ITEM	QTY	UNIT COST	AMOUNT
5	Hotdog Sandwich	50	50	2500
6	Cheese Burger	80	63	5040
7	Spaghetti	100	60	6000
8	Palabok with chicken	105	125	13125
9		TOTAL		26665
10		SALES TAX		1999.875

You can add parentheses to any equation to make it easier to read. While it won't change the result of the formula in this example, we could enclose the multiplication operations within parentheses to clarify that they will be calculated before the addition.

5. Select cell D9, and press F2 on your keyboard.
6. Edit the formula by adding parenthesis.

$$= (B5 * C5) + (B6 * C6) + (B7 * C7) + (B8 * C8)$$

=(B5*C5)+(B6*C6)+(B7*C7)+(B8*C8)

	A	B	C	D	E
1	MARJONEL SNACKBAR				
2	Sales Invoice				
3					
4	MENU ITEM	QTY	UNIT COST	AMOUNT	
5	Hotdog Sandwich	50	50	2500	
6	Cheese Burger	80	63	5040	
7	Spaghetti	100	60	6000	
8	Palabok with chicken	105	125	13125	
9		TOTAL		= (B5 * C5) + (B6 * C6) + (B7 * C7) + (B8 * C8)	
10		SALES TAX		1999.875	

Note. Excel **will not always tell you** if your formula contains an error, so it's up to you to check all of your formulas.

Save the workbook with a new filename
Q4_W2_PT***(where *** is your family name)

Activity 3.

Multiple choice. Select the letter of the correct answer.

1. Which of the following is the first order of operations?
 - a. Division
 - b. Subtraction
 - c. To the power
 - d. Parenthesis
2. Excel will always tell you if there's a problem with the formula you've created.
 - a. True
 - b. False
3. What is the correct answer to this operation
 $160/4 \wedge 2 - (3 * 5) + 5$?
 - a. 11
 - b. 15
 - c. 5
 - d. 0
4. The order of operations when creating a formula in Excel doesn't matter as long as it performs computation.
 - a. True
 - b. False
5. _____ are horizontal.
 - a. Row
 - b. Column

6. What is the purpose of parentheses in the order of operations?
 - a. Makes the equation easier to read.
 - b. It signifies that operation enclosed in parentheses should be performed first.
 - c. To group equations
 - d. All of the above
7. A combination of numbers and symbols used to express as calculation. Always begin with a = symbol.
 - a. Worksheet
 - b. Sheet tabs
 - c. Cell address
 - d. Formula
8. _____ are vertical.
 - a. Column
 - b. Row
9. Which of the formula below is correct in computing for the sales tax?
 - a. $= 200 * 0.015$
 - b. $= B2 + 0.015$
 - c. $= 200 + 0.015$
 - d. $= B2 * 0.015$
10. What key on your keyboard do you press after the typing the formula?
 - a. Alt
 - b. Spacebar
 - c. Enter
 - d. Ctrl
11. Excel will always tell you if there is a problem with a formula you've created.
 - a. True
 - b. False

Complete the statements below.

I understand _____
 I don't understand _____
 I need more information about _____



Links and/or Other References

<https://edu.gcfglobal.org/en/excel/getting-started-with-excel/1/>
<https://quizizz.com/admin/quiz/>

