Exam 77-728 Microsoft Excel 2016 Expert



Microsoft Excel



The Dynamic Duo: VLOOKUP and the IF function

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In this lesson you will learn:

- 1. Create a Lookup Table.
- 2. Name the Lookup Table.
- 3. Use a VLOOKUP Table in a Formula.
- 4. Use Logical Functions: IF



Microsoft Excel 2016 Intermediate 3.2 Look Up Data By Using Functions

Home-> Styles->Conditional Formatting



The Dynamic Duo

Microsoft Office is most effective when the tasks are strung together in a sequence. It is how we process our work: many little steps one after the other. Today's lesson presents the Dynamic Duo: VLOOKUP and the Logical Function IF.

The Lookup Function

Say your company offers a bonus for meeting sales goals. The bonus will be calculated as a percent of the sales. The best way to calculate the bonus is to look up the answer in a Table.

Excel calls this the Lookup function. A vertical, or **VLOOKUP** uses the values in the columns. A horizontal, or **HLOOKUP**, uses the data in rows.

Keep going...

This is an example of the completed spreadsheet

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4	Elizabe	eth \$	8,170.00	15%	\$1,225.50	Well done!			\$ 7,500.0	0 15%
5	Nikki	\$	13,560.00	20%	\$2,712.00	Well done!			\$10,000.0	0 20%
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Exam 77-728 Microsoft Excel 2016 Create Advanced Formulas

3.2 Look up data by using Functions

3.2.1 Look up data by using the VLOOKUP function

Setup the Spreadsheet

1. Try This: Enter the Labels

Select Cell A1 and type: Sales Rep Select Cell B1 and type: Total

Select Row 1 and Format the Row BOLD. This is the Header Row. By Definition the Header Row should be BOLD.

Try This: Format the Numbers

Select Column B. Go to **Home->Number-> Accounting**.

Keep going...

Home->Number-> Accounting

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Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.5 Apply number formats

Enter the Data

2. Try This: Enter the Data

Select Cell A2 and type: Alex Select Cell A3 and type: Connie Select Cell A4 and type: Elizabeth Select Cell A5 and type: Nikki

And This: Enter the Numbers

Select Cell B2 and type: 3,500.00 Select Cell B3 and type: 8,310.00 Select Cell B4 and type: 8,170.00 Select Cell B5 and type: 13,560.00

Keep going...



Enter the Data

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2	Alex	\$ 3,500.00									
3	Connie	\$ 8,130.00									
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Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.5 Apply number formats

Add More to the Spreadsheet

3. Try This: Add the following Labels: In cell C1, type Commission In cell D1, type Bonus In cell F1, type Sales In cell G1, type Percent

Format the Labels **Bold**. Format Column F for **Accounting**. Format Column G for **Percentage**.

Keep going...

Home-> Number> Percentage



Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.5 Apply number formats

Create a VLOOKUP Table

This Lookup table has two columns: Sales and Percent. Sales, Column F, is formatted for Accounting (\$) and Percent, Column G, is formatted for Percentage (%).

4. Try it: Add Data to the table

Enter the following values:



Home->Number->Accounting

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	4	Elizabeth	\$ 8,1	70.00						\$ 7,500.00	15	%			
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Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.5 Apply number formats



Name That Tune

In Excel, you can name a cell, or a range of cells. Using names makes it easy to go to a particular place. It also simplifies cell references when you create equations.

5. Try it: Name the Range Select Cells F1 through G5. Go to Formula->Defined Names. Select Define Name.

What Do You See? The New Name screen will pop up. The Name, Sales, came from the label in Cell F1.

Refers to: Shows the name of the spreadsheet, Bonus. The Range of data can be found in cell F1 through G5.

Click OK and continue...

Formulas-> Defined Name> Define Name

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Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.5 Apply number formats

Insert the VLOOKUP Function

6. Try This: Insert a VLOOKUP Function

Select Cell C2. Go to Formula -> Function Library. Go to Lookup & Reference. Select VLOOKUP from the function list.

Please keep going...



Formulas->Function Library->Lookup and Reference->VLOOKUP

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Exam 77-728 Microsoft Excel 2016 Create Advanced Formulas 3.2 Look up data by using Functions

3.2.1 Look up data by using the VLOOKUP function

7. What Do You See? Excel will prompt you to fill in the Function Arguments.

Here are some answers.

Lookup_Value: The first argument asks, "Where is the data?" In our example, Alex's total is in cell B2. Click on cell B2.

Table_array: The second argument wants to know, "Where is the lookup table?" You can type the name, sales, for the range or use the red, white and blue lookup button to go to highlight cells F1 through G5.

Col_index_num: The third argument needs to identify where the answers are.

In our two column Sales array, the Percent can be found in Column 2.

Click OK.

Formulas->Function Library->Lookup and Reference->VLOOKUP

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Exam 77-728 Microsoft Excel 2016 Create Advanced Formulas

3.2 Look up data by using Functions

3.2.1 Look up data by using the VLOOKUP function

Hello, VLOOKUP

8. What Do You See? The VLOOKUP formula compared the data in Cell B2 to the Sales Table in F1:G5.. The answer for Percent can be found in Column 2 of the Sales Table.

Prove It: Audit the Formula

Double click C2. The Formula will be displayed. Click on Sales in the Formula. Excel will outline the Sales LOOKUP Table.

That will work.

Click **ENTER** on your keyboard to see the answer: 5% instead of the formula.

Formulas->Function Library->Lookup and Reference->VLOOKUP

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Exam 77-728 Microsoft Excel 2016 Create Advanced Formulas

3.2 Look up data by using Functions

3.2.1 Look up data by using the VLOOKUP function

Logical Formulas

The previous steps demonstrated how to create, name and use Lookup tables. Another useful set of Functions are the Logical formulas.

A Logical formula is binary. There are only two answers: True/False, Yes/No, Above/Below. It begins with a Logical Test.

Say you wanted to calculate if the goals were met? For example, did sales exceed our goal of 10%? You could use a Logical equation here.

Working with Logical Formulas

1. Try it: Create an IF Function

Select Cell E1 and type: Comments Select Cell E1 and format the label **BOLD**.

Select Cell E2. Go to Formulas->Function Library ->Logical. Click on IF

Keep going...

Formulas->Function Library ->Logical->IF



Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.2 Format Cells and Ranges 2.2.6 Apply Cell formats

Enter the Function Arguments

2. What Do You See? Microsoft Excel will prompt you to fill in the Function Arguments. There are two answers to the Logical test: One if the answer is true, another if the answer is false.

Logical Test: C2>10% Value_if_true: Well done! Value_if_false: Needs Work

Memo to Self: Excel will add the "quotes" if you enter Text in the Function Arguments.

Please click **OK**.

Formulas->Function Library ->Logical->IF

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Exam 77-727 Excel 2016 Core Perform Operations with Formulas and Functions

4.2 Perform Conditional Operations by using Functions

4.2.1 Perform logical operations by using the IF function

Enter the Function Arguments

3. What Do You See? These Comments are based on the data. Most of them say, "Well done!" The data in C2 that is less that ten percent says, "Needs work."

The Logical function looks like this: =IF(C2>10%, "Well done!", "Needs Work")

Good to Know: If you wish to edit the Function, click on the Fx to the left of the Function in the Formula Bar.

Please keep going....

Formulas->Function Library ->Logical->IF

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3	Connie	\$ 8,130	.00	15%	\$ 1,2	219.50	Well d	one!	\$ 5,000.00	10%
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Exam 77-727 Excel 2016 Core Perform Operations with Formulas and Functions

4.2 Perform Conditional Operations by using Functions

4.2.1 Perform logical operations by using the IF function

Fun with Conditional Formatting

Microsoft Excel has a library of Conditional Formatting including Data Bars, Color Sets and Icons. Each of these formats is based on Conditional Formulas, or Rules.

You can use **Conditional Formatting** to Highlight the results, based on TEXT:

If the text is Well Done: Green is good If the text is Needs Work: Yellow means caution

4. Try This: Apply Conditional Formatting

Select Column E. Go to Home ->Styles. Go to Conditional Formatting. Click on: Highlight Cells Rules. Select: Text that Contains...

Keep going, you will be prompted...

Home->Styles->Conditional Formatting



Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.3 Summarize and Organize Data 2.3.4 Apply Conditional Formatting

Choose the Formatting

What Do You See? You will be prompted to enter the Text and select the colors when you select a Text Rule.

5. Try This: Edit the Conditional Formatting

When you are prompted edit the following: Text: Well done! Format with: Green Fill with Dark Green Text

OK, Do it Again: Add Another Text Rule Go to Home ->Styles-> Go to Conditional Formatting. Click on: Highlight Cells Rules. Select: Text that Contains...

When you are prompted edit the following: Text: Needs Work Format with: Yellow Fill with Dark Yellow Text.

Soooo, did it work?

Home->Styles->Conditional Formatting

 f_x Comments С D Е F G н Commision Comments Sales Percent Bonus 5% \$ 175.00 Needs Work \$ 2,500.00 5% \$ \$ 5,000.00 15% 1,219.50 Well done! 10% 15% \$ 1,225.50 Well done! \$ 7,500.00 15% 20% Ś 2,712.00 Well done! \$10,000.00 20% Text That Contains ? × Format cells that contain the text: Green Fill with Dark Green Text Well done! -~ with OK Cancel

Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.3 Summarize and Organize Data 2.3.4 Apply Conditional Formatting

All Together Now

6. What Do You See? We used several Formulas to get this colorful display.

The Sales Table was created in F1:G5. It has two Columns: Sales (\$) and Percent (%) This Table was Named: Sales

The VLOOKUP Function used the Sales Table to find the right Sales Commission in Column 2.

The IF Logical Function compared theSales Commission we calculated with a VLOOKUP Function. The VLOOKUP function returned one answer if it is True, another if it False.

Finally, **Conditional Formatting** was applied to the Comments.

Soooo, did it work? Yeah. It looks pretty cool.

At work, Conditional Formatting can be applied to data that is shipped late (red!) or parts that are greater than the approved tolerances.

Formulas->Function Library ->Logical->IF



Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.3 Summarize and Organize Data 2.3.4 Apply Conditional Formatting

Summary

This lesson introduced the Dynamic Duo: VLOOKUP and the Logical Function IF.

Can these formulas be used with the other Logical Options: And, Or, Not? Absolutely. But that is new story for another day.

Allez allez in free. You done good. You get the cookies!

Formulas->Function Library ->Logical->IF

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\$	1,219.50	Well done!	\$ 5,000.00	10%
\$	1,225.50	Well done!	\$ 7,500.00	15%
\$	2,712.00	Well done!	\$10,000.00	20%

Exam 77-727 Excel 2016 Core Manage Data Cells and Ranges 2.3 Summarize and Organize Data 2.3.4 Apply Conditional Formatting